IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION

REALTIME DATA, LLC D/B/A IXO,	§	
	§	
Plaintiff,	§	
	§	
v.	§	**CIVIL ACTION No. 6:08cv144**
	§	
PACKETEER, INC., et al.,	§	
	§	
Defendants.	§	
	§	

MEMORANDUM OPINION AND ORDER

This claim construction opinion construes the disputed terms in the nine patents asserted by Plaintiff Realtime Data, LLC d/b/a IXO ("Realtime"): 1) U.S. Patent No. 6,601,104 ("the '104 patent"); 2) U.S. Patent No. 6,604, 158 ("the '158 patent"); 3) U.S. Patent No. 7,321,937 ("the '937 patent"); 4) U.S. Patent No. 6,624,761 ("the '761 patent"); 5) U.S. Patent No. 7,161,506 ("the '506 patent"); 6) U.S. Patent No. 7,378,992 ("the '992 patent"); 7) U.S. Patent No. 7,352,300 ("the '300 patent"); 8) U.S. Patent No. 6,748,457 ("the '457 patent"); and 9) U.S. Patent No. 7,376,772 ("the '772 patent").

On April 18, 2008, Plaintiff filed the instant action against Defendants Packeteer, Inc. ("Packeteer"); Citrix Systems, Inc. ("Citrix"); Expand Networks, Inc. ("Expand"); F5 Networks, Inc. ("F5"); 7-Eleven, Inc. ("7-Eleven"); ABM Industries, Inc. ("ABM"); ABM Janitorial Services–South Central, Inc. ("ABMJ"); Averitt Express, Inc. ("Averitt"); Build-A-Bear Workshop, Inc. ("BAB"); DHL Express (USA), Inc. ("DHL"); Interstate Battery System of America, Inc. ("IBSA"); and O'Reilly Automotive, Inc. ("O'Reilly"), alleging infringement of the nine asserted patents.[1] (Doc. No. 1).

[1]Defendant Blue Coat Systems, Inc. ("Blue Coat") was added as a Defendant when Plaintiff filed its First Amended Complaint. (Doc. No. 58).

The parties have submitted a number of claim terms for construction. Plaintiff has filed an Opening Claim Construction Brief ("Opening") (Doc. No. 238) and a Reply Claim Construction Brief ("Reply") (Doc. No. 267). Defendants separately filed responsive briefs. Defendants Blue Coat, Packeteer, 7-Eleven, ABM, ABMJ, and BAB (collectively, "Blue Coat Defendants") filed a Responsive Brief in Support of Claim Construction Pursuant to P.R. 4-5 ("Blue Coat Resp.") (Doc. No. 252), as well as a Sur-Reply to Plaintiff's Claim Construction Brief ("Blue Coat Surreply") (Doc. No. 276). Defendants Citrix, Expand, DHL, IBSA, and O'Reilly (collectively, "Citrix Defendants") filed a Responsive Claim Construction Brief Pursuant to P.R. 4-5 ("Citrix Resp.") (Doc. No. 257), as well as a Surreply Claim Construction Brief ("Citrix Surreply") (Doc. No. 277). Defendants F5 and Averitt (collectively, "F5 Defendants") also filed a Claim Construction Brief Regarding U.S. Patent Nos. 6,748,457 and 7,376,772 ("F5 Resp.") (Doc. No. 256), as well as a Surreply Claim Construction Brief Regarding U.S. Patent Nos. 6,748,457 and 7,376,772 ("F5 Surreply") (Doc. No. 275).[2] The Court held a *Markman* hearing on April 9, 2009. (Doc. No. 283). For the reasons stated herein, the Court adopts the constructions set forth below.

BACKGROUND

The asserted patents can be viewed as three patent families: 1) the data acceleration patent family; 2) the data compression patent family; and 3) the hardware patent family. The data acceleration patent family is comprised of the '104 patent, the '158 patent, and the '937 patent. This patent family teaches systems and methods for providing accelerated data storage and transmission. The data compression patent family is comprised of the '761 patent, the '506 patent, the '992 patent, and the

[2]The F5 Defendants address the proposed constructions of only the '457 and '772 patents because these patents are asserted only against the F5 Defendants. F5 SURREPLY at 1. With respect to the remaining disputed terms, the F5 Defendants expressly adopt the proposed constructions and briefing providing by the Blue Coat and Citrix Defendants. *Id.*

'300 patent. This patent family teaches methods for performing data compression. The hardware patent family is comprised of the '457 patent and the '772 patent. This patent family teaches apparatus designs associated with data compression and accelerated data storage and retrieval.

Plaintiff asserts over ninety claims of the nine asserted patents. *See* NOTICE OF FILING OF JOINT CLAIM CONSTRUCTION CHART, EXH. A ("Claim Chart") (Doc. No. 274). Representative claims from each of the three patent families are provided below with the disputed claim terms set forth in bold. Claim 1 of the '104 patent provides:

> 1. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for providing accelerated data storage and retrieval, said method steps comprising:
>
> ŗeceiving a **data stream** at an input data transmission rate which is greater than a **data storage rate** of a **target storage device**;
>
> compressing the **data stream** at a **compression rate** that **increases the effective data storage rate** of the **data storage device**; and
>
> storing the compressed **data stream** in the **target storage device**.

'104 patent at 18:41 (claim 1). Claim 1 of the '761 patent provides:

> 1. A method for compressing data, comprising the steps of:
>
> analyzing a data block of an **input data stream** to identify a **data type** of the data block, the **input data stream** comprising a plurality of disparate data types;
>
> performing **content dependent data compression** on the data block, if the **data type** of the data block is identified;
>
> performing **content independent data compression** on the data block, if the **data type** of the data block is not identified.

'761 patent at 26:50 (claim 1). Claim 18 of the '457 patent provides:

> 18. A data storage controller for controlling storage and retrieval of data to and from a data storage device, the data 30 storage controller comprising;

> a digital signal processor (DSP) or processor comprising a **data compression engine (DCE)** for compressing data stored to the **data storage device** and for decompressing data retrieved from the **data storage device**;
>
> a **programmable logic device**, wherein the **programmable logic device** is programmed by the DSP or processor to (I) **instantiate** a first interface for **operatively interfacing** the data storage controller to the **data storage device** and to (ii) **instantiate** a **second interface** for **operatively interfacing** the data storage controller to a host system;
>
> and a non-volatile memory device, for storing logic code associated with the DSP or processor, the first interface and the **second interface**;
>
> a cache memory device for temporarily storing data that is processed by or transmitted through the data storage controller; wherein the DSP or processor comprises a **bandwidth allocation controller** for **controlling access** to the cache memory device by the DCE, the first interface and the **second interface**, based on one of an anticipated and actual compression rate of the **DCE**.

'457 patent at 29:29–39, 30:1–13 (claim 18). The parties submitted a total of twenty-eight terms for construction.[3] Each disputed term will be addressed herein.

LEGAL STANDARD

The claims of a patent define the patented invention. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 389-90 (1996). Under *Markman v. Westview Instruments, Inc.*, district courts construe the scope and meaning of disputed patent claims as a matter of law. 517 U.S. at 373. Claims are construed from the standpoint of a person having ordinary skill in the art, *Brookhill-Wilk 1, LLC v.*

[3]The parties originally identified over one-hundred and thirty disputed claim terms. OPENING at 1. By March 5, 2009, when Plaintiff filed its Opening Brief, this number had decreased to sixty-four. *Id.* The parties later agreed to limit argument to the twenty-eight claim terms addressed herein, with twenty-two to be argued at the *Markman* hearing and six to be submitted on the parties' briefs. PARTIES' JOINT SUBMISSION OF TERMS TO BE HEARD AT MARKMAN HEARING ("Notice of Terms") at 2–3; *Realtime Data, LLC v. Packeteer, Inc.*, No. 6:08-cv-144, slip op. at 1–2 (E.D. Tex. Mar. 25, 2009) (Doc. No. 265).

Intuitive Surgical, Inc., 334 F.3d 1294, 1298 (Fed. Cir. 2003), and according to the Federal Circuit, the court must "indulge a heavy presumption that a claim term carries its ordinary and customary meaning." *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (internal quotations omitted); *see also Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) ("the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention").

The first step of the claim construction analysis requires the court to look to the intrinsic evidence, beginning with the words of the claims themselves, followed by the specification and—if in evidence—the prosecution history. *Teleflex, Inc. v. Ficosa N. Am.*, 299 F.3d 1313, 1324 (Fed. Cir. 2002); *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582-84 (Fed. Cir. 1996); *see also Phillips*, 415 F.3d at 1315 ("the claims themselves provide substantial guidance as to the meaning of particular claim terms"). A term's context in the asserted claim can be very instructive, and other claims may aid in determining the term's meaning because claim terms are typically used consistently throughout the patent. *Phillips*, 415 F.3d at 1314.

The claims of a patent "must [also] be read in view of the specification, of which they are a part" because the specification may help resolve ambiguity where the words in the claims lack clarity. *Id.* at 1315; *see also Teleflex*, 299 F.3d at 1325. Yet, the written description should not trump the clear meaning of the claim terms. *Tate Access Floors, Inc. v. Maxcess Techs., Inc.*, 222 F.3d 958, 966 (Fed. Cir. 2000) ("[a]lthough claims must be read in light of the specification of which they are part . . . it is improper to read limitations from the written description into a claim"); *Arbitron, Inc. v. Int'l Demographics Inc.*, No. 2:07-cv-434, 2009 WL 68875, *3 (E.D. Tex. Jan. 8, 2009) ("although the specification may indicate that certain embodiments are preferred,

particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than the embodiments").

Finally, an inventor may "choose [] to be his or her own lexicographer" by expressly defining terms in the specification. *Johnson Worldwide Assocs., Inc. v. Zebco Corp.*, 175 F.3d 985, 990 (Fed. Cir. 1999). A court may examine the prosecution history to determine whether the patentee intended to deviate from a term's ordinary and customary meaning. *Teleflex*, 299 F.3d at 1326. The prosecution history may "limit [] the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." *Id.* (quoting *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985)). If analysis of the intrinsic evidence resolves any ambiguity in disputed claim terms, then "it is improper to rely on extrinsic evidence." *Vitronics*, 90 F.3d at 1583 (citations omitted). Extrinsic evidence—such as expert testimony, dictionaries, and treatises—may be used only if ambiguities remain after analyzing all the intrinsic evidence. *Id.* at 1584.

Where a claim limitation is expressed in means-plus-function language and does not recite definite structure in support of its function, the limitation is subject to 35 U.S.C. section 112, paragraph 6. *Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997). In relevant part, section 112 mandates that "such a claim limitation be construed to cover the corresponding structure . . . described in the specification and equivalents thereof." *Id*. (internal quotations omitted). Accordingly, when faced with means-plus-function limitations, courts "must turn to the written description of the patent to find the structure that corresponds to the means recited in the [limitations]." *Id*.

Construing a means-plus-function limitation involves two inquiries. The first step requires "a determination of the function of the means-plus-function limitation." *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1311 (Fed. Cir. 2001). Once a court has determined the limitation's function, "the next step is to determine the corresponding structure disclosed in the specification and equivalents thereof." *Id*. A structure is corresponding "only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Id*. Moreover, the focus of the corresponding structure inquiry is not merely whether a structure is capable of performing the recited function, but rather whether the corresponding structure is "clearly linked or associated with the [recited] function." *Id*.

DISCUSSION

The parties present the following twenty-eight claim terms and phrases for construction: 1) "target storage device/data storage device;" 2) "data storage rate;" 3) "increases the effective data storage rate;" 4) "means for receiving a data stream having an input data transmission rate which is greater than a data storage rate of a data storage device;" 5) "means for compressing the data stream at a compression rate that increases the effective data storage rate of the data storage device;" 6) "data type;" 7) "content independent data compression;" 8) "single data compression encoder"/"single compression encoder"/ "a data compression encoder"/"wherein if one or more encoders is associated to said type, compressing said data block with at least one of said one or more encoders, else compressing with a data compression encoder"/"said data compression encoder"/"default encoder;" 9) "data stream;" 10) "input data stream"/"receiving a data stream;" 11) "selecting resolution parameters;" 12) "wherein said first lossy compression encoder compresses said data block at said selected resolution parameters;" 13) desirability factor;" 14) "data compression engine;" 15) "programmable logic device;" 16) "instantiate . . . [interfaces for] operatively interfacing;"

17) "bandwidth allocation controller [for] controlling access;" 18) "compressing said received data stream using a plurality of encoders configured in parallel configuration"/"parallel configuration [of a plurality of encoders];" 19) "second interface;" 20) "compression rate;" 21) "wherein said first bandwidth is substantially greater than said second bandwidth;" 22) "a plurality of Lempel-Ziv encoders;" 23) "means for performing lossless compression;" 24) "plurality of encoders of an identical type;" 25) "compression type;" 26) "first parameter indicative of a compression type to be applied;" 27) "non-identifiable data type;" and 28) "content dependent data compression."[4]

I. "target storage device"/"data storage device"[5]

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
local memory device that receives data from the compressor	the device to which information is ultimately destined for storage

Plaintiff contends that the specification explicitly notes that a target storage device can be any memory, including random access memory ("RAM") which is only a temporary means of storing data. REPLY at 1. Further, Plaintiff argues that the distinguishing feature of the disclosed target storage device is that it stores compressed data, not for how long it stores the data. *Id.* Plaintiff also points out that all the disclosed storage devices are local, and there is no teaching in the patent that goes to remote memory. *Id.* at 2. Plaintiff further argues that the purpose of the '104 and '158 patents is to speed up data storage by compensating for the physical capability of a storage device. *Id.* Yet, if the storage device were remote, the speed of the transmission line would need to be considered. *Id.*

[4]The parties have also agreed to a number of constructions. PARTIES' JOINT CLAIM CONSTRUCTION AND PREHEARING STATEMENT PURSUANT TO P.R. 4-3 ("PREHEARING STATEMENT"), EXH. A.

[5]The terms "target storage device" and "data storage device" are contained in claims 1, 13, and 25 of the '104 patent; claims 1 and 9 of the '158 patent; claim 18 of the '457 patent; and claims 1 and 13 of the '772 patent.

The Blue Coat and Citrix Defendants argue that Plaintiff's proposed construction improperly includes any storage device that the data stream passes through and that the term should be construed to include only the ultimate destination for storage of the information. BLUE COAT SURREPLY at 1–2; CITRIX SURREPLY at 2. The Blue Coat Defendants argue that their proposed construction does not exclude RAM or other transitory storage devices, as long as those devices are the ultimate destination for storage of the subject information. *Id.* at 2. The Blue Coat Defendants further argue that Plaintiff's proposed construction limiting the memory devices to those that are local is not supported by the specification. *Id.*

The F5 Defendants argue that the '457 and '772 patents consistently refer to the "data storage device" as a mass storage device, such as "[hard] disk 11." F5 SURREPLY at 3. Moreover, the F5 Defendants argue that the initial portions of these two patents note the difficulties and limitations of rapidly storing and retrieving data from disk memory. *Id.* Finally, the F5 Defendants argue that the claims separately refer to cache memory in the controller for data passing through, and therefore, the term "data storage device" refers to the device that is the ultimate destination of the compressed data. *Id.*

Looking first to the claims of the asserted patents, the patentee uses these terms interchangeably. For example, the first limitation of claim 1 of the '104 patent recites a "target storage device." '104 patent at 18:41–52 (claim 1). The third limitation refers back to the first limitation by reciting "*the* target storage device." Because the use of the definite article "the"—like "said"—in a claim is used to refer back to a previous use of the same term, *Baldwin Graphic Systems, Inc. v. Siebert*, 512 F.3d 1338, 1342 (Fed. Cir. 2008), "*the* target storage device" disclosed in the third limitation refers back to the antecedent "target storage device" referred to in the first limitation. Similarly, the second limitation discloses "*the* data storage device." However, "data storage device" appears nowhere else in the claim.

Moreover, the first and second limitations both refer to the data storage rate of the target and data storage devices. Thus, the use of the term "the data storage device" in the second limitation of claim 1 of the '104 patent must refer back to the previous use of the term "target storage device" in the first limitation of that same claim. *See* also '104 patent at 20:47–56 (claim 25).

The specification of the '104 patent further supports this conclusion. *See* '104 patent at 5:32–33 ("the data storage device 45 (e.g., a typical target mass storage device)"). These two terms, along with "memory storage device," "target memory," "storage device," "memory device," "disk memory device," "disk storage device" and "mass storage device," are used virtually interchangeably within the specification. *Compare* '104 patent at 5:32–33 ("data storage device 45") *with id.* at 5:10–11 ("the memory storage device 45") *and id.* at 6:55 ("the storage device 45"); *see also* '104 patent, abstract ("target memory"); *id.* at 3:23 ("disk memory device"); *id.* at 5:8–9 ("memory device"); *id.* at 2:47 (same); *id.* at 5:17 (same); *id.* at 13:11 (same); *id.* at 13:20 (same); *id.* at 13:63 (same); *id.* at 5:15 ("mass storage devices"); *id.* at 13:17–18 (same); *id.* at 13:61 (same).[6]

The specification also discloses the patentee's intended breadth of these two terms:

> [T]he data storage device 45 may be any form of memory device including all forms of sequential, pseudorandom, and random access storage devices. The data storage device 45 may be volatile or non-volatile in nature, or any combination thereof. Storage devices as known within the current art include all forms of random access memory (RAM), magnetic and optical tape, magnetic and optical disks, along with various other forms of solid-state mass storage devices (e.g., ATA/ATAPI IDE disk). Thus it should be noted that the current invention applies to all forms and manners of memory devices

[6]The '158, '457, and '772 patents similarly use these terms. *See* '158 patent at 2:19 ("memory storage device"); *id.* at 2:23 ("mass storage devices"); *id.* at 2:41 ("disk storage devices"); *id.* at 2:55 ("storage device"); *id.* at 3:1 ("target storage device"); *id.* at 3:50 ("disk memory device"); *id.* at 5:39–40 ("memory device"); '457 patent at 1:32–41 ("mass storage device"); *id.* at 1:46 ("memory storage devices"); *id.* at 2:33–34 ("disk storage device"); *id.* at 3:23 ("storage device"); *id.* at 3:37 ("data storage device"); *id.* at 5:50–54 ("target storage device"); '772 patent at 3:43 ("data storage devices"); *id.* at 3:32–33 ("mass storage devices"); *id.* at 3:34 ("storage device"); *id.* at 6:7 ("target storage device"); *id.* at 7:7 ("memory device").

> including, but not limited to, storage devices utilizing magnetic, optical, and chemical techniques, or any combination thereof.

'104 patent at 13:10–22. Taken as a whole, the specifications of the '104, '158, '457, and '772 patents disclose that the terms "target storage device" and "data storage device" both refer to a device that stores data.

Plaintiff's proposed construction would limit these devices to local devices that receive data from the compressor. Yet, the '158 patent discloses that data accelerator 80 receives data from data storage device 45. '158 patent at 6:30–42. This shows that data storage devices do more than simply receive data from the compressor—they also send data to other components in the system. Further, the patents do not limit the inventions to local area networks, nor do the patents limit data storage devices to local memory devices. *See* '772 patent at 6:24–26 ("accelerated data storage/retrieval mitigates the traditional bottleneck associated with, e.g., local and network disk accesses"); *id.* at 10:55–58 ("the I/O ports 27 of the DSP 21 may be used for transmitting data (compressed or uncompressed) that is either retrieved from the disk 11 or received from the host system via the bus 16, to remote locations for processing and/or storage"); *id.* at 30:57–60 ("in Network Attached Storage Services and other mass storage arrays it may be advantageous to have the data acceleration solely within one or more host CPUs"); '457 patent at 3:65–67, 4:1–3 ("external Input/Output ports [] may be used for transmitting data (compressed or uncompressed) from the data storage to a remote location and for receiving data (compressed or uncompressed) transmitted from a remote location"); *id.* at 10:32–37 ("the I/O ports 27 of the DSP 21 may be used for transmitting data . . . to remote locations for processing and/or storage"). The Court, therefore, rejects Plaintiff's proposed construction.

Defendants' proposed construction limits the target/data storage devices to those which data is "ultimately destined for storage." Yet, as previously noted, the '158 patent discloses that data

accelerator 80 receives data from data storage device 45. '158 patent at 6:30–42. So although data is generally en route to the target and data storage devices for storage, these devices are not necessarily the "ultimate" or final destination for the data because the devices not only receive data for storage, but also convey data previously stored. The Court, therefore, rejects Defendants' proposed construction as well.

As has been previously noted, it is undisputed that the target and data storage devices are memory devices which store data. Further, as used in the claims, these terms refer to particular or identified storage devices to which data is routed or directed for storage. Therefore, the Court finds that the proper construction of the terms "target storage device" and "data storage device" is "an identified memory device to which data is directed for storage."

II. "data storage rate"[7]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
maximum sustained rate at which data can be written to the data storage device	maximum rate at which data can be stored on the data storage device

The parties only dispute regarding this term is whether the storage rate is "sustained." *See* REPLY at 2. Plaintiff argues that storage rates may increase instantaneously due to various factors and that the specification of the '158 patent explicitly discloses that the claimed invention may increase the effective bandwidth of the data storage process without increasing the instantaneous bandwidth of the data storage device. REPLY at 3.

The Blue Coat Defendants argue that Plaintiff's proposed construction improperly limits this term to a "sustained" rate of storage and that this construction is based on extrinsic evidence that is

[7]The term "data storage rate" is contained in claims 1, 13, and 25 of the '104 patent and claims 1 and 9 of the '158 patent.

inconsistent with the specification. BLUE COAT SURREPLY at 2. The Citrix Defendants argue that because the '158 patent was a continuation-in-part of the '104 patent, the '158 patent is not limited by what was disclosed in the continuation-in-part application that resulted in the '158 patent. *Id.* at 3. The Citrix Defendants also argue that the specification's use of the term "continuous" does not support Plaintiff's construction. *Id.*

The asserted claims of the '104 and '158 patents indicate that the "data storage rate" refers to the storage rate of the target and data storage devices. '104 patent at 18:41–52 (claim 1); *id.* at 19:54–63 (claim 13); *id.* at 20:47–56 (claim 25); '158 patent at 20:4–23 (claim 1); *id.* at 20:52–67 (claim 9). The asserted claims also refer to the "data storage rate" as being less than an input transmission rate of a digital data stream and as being "effective[ly]" increased due to data compression. '104 patent at 18:41–52 (claim 1); *id.* at 19:54–63 (claim 13); *id.* at 20:47–56 (claim 25); '158 patent at 20:4–23 (claim 1); *id.* at 20:52–67 (claim 9). A number of unasserted claims refer to the claimed invention as providing "continuous storage of the input data stream" resulting from the added limitations in these dependent claims. *See, e.g.*, '104 patent at 18:53–57 (claim 2); *id.* at 19:64–67 (claim 14); '158 patent at 20:24–28 (claim 2); *id.* at 21:1–5 (claim 10).

The specifications of both patents also refer to "continuous" storage. *See, e.g.*, '104 patent at 3:8–13 ("[the] compression ratio [] is at least equal to the ratio of the input data transmission rate to the data storage rate so as to provide continuous storage of the input data stream at the input data transmission rate"); *id.* at 3:14–19 ("a decompression ratio which is equal to or greater than the ratio of the data access rate to a maximum accepted output data transmission rate . . . provide[s] a continuous and optimal data output transmission rate"); '158 patent at 6:49–50 ("the data storage device 45 is capable of continuously supplying 30 megabytes per second").

The patentee noted that a problem in the art at the time the patent issued resulted from limited data storage rates of memory storage devices. '104 patent at 2:14–28 ("magnetic disk mass storage devices . . . suffer from significant seek-time access delays along with profound read/write data rate limitations"); '158 patent at 2:18–34 (same). The patentee goes on to call these limited data storage rates a "fundamental problem." '158 patent at 2:39–44. In order to resolve that problem, the claimed invention "provides an effective increase of the data storage and retrieval bandwidth of a memory storage device." '104 patent at 2:53–55; '158 patent at 2:62–64. Moreover, if this term referred to the peak or instantaneous rate of a data storage device, as Defendants' proposed construction could implicate, the claimed invention would fail to resolve the disclosed problems in the art by effectively increasing the data storage rate of the data storage device. An instantaneous or peak rate that is effectively increased would not eliminate the transmission delay resulting from the limited storage rates of the memory devices. *See, e.g.*, '158 patent at 6:10–14 ("since data may be received in high-speed bursts, the present invention may increase the effective bandwidth of the data storage process without increasing the instantaneous bandwidth of the data storage device"). Thus, as Plaintiff argues, in order to solve the problem of limited data storage rates of data storage devices by providing an effective increase in the data storage rate, this term must refer to the maximum sustained rate at which the device can operate. For all the foregoing reasons, the Court finds that the proper construction for "data storage rate" is "maximum sustained rate at which data can be written to the data storage device."

III. "increases the effective data storage rate"[8]

Plaintiff's Proposed Construction	Blue Coat Defendants' Proposed Construction	Citrix Defendants' Proposed Construction
increases the effective maximum sustained rate at which data can be written to the storage device by compressing and storing the data faster than the input data stream itself could be stored	time from the beginning of the compression process through the completion of storage of the data stream on the target storage device is less than the time to simply store the uncompressed data stream on the target storage device at the maximum data storage rate	increasing the maximum storage rate of a storage device by simultaneously compressing and storing the input data stream at a rate faster than the uncompressed stream can be stored in real time

Plaintiff argues that the data is not "simultaneously" compressed and stored and that real time storage is merely a preferred embodiment disclosed in the specification—not a limitation on the scope of the claims. REPLY at 4–5. Plaintiff further argues that its proposed construction is "clearer" than the Blue Coat Defendants' because the Blue Coat Defendants' construction does not define the beginning of the compression process. *Id*. at 5.

The Blue Coat Defendants argue that determining the "effective data storage rate" requires looking at all compression-related functions and failure to include all of these steps would result in a claim scope that covers prior art compression systems. BLUE COAT SURREPLY at 3. The Citrix Defendants argue that during prosecution sequential compression and storing was disclaimed, and therefore, simultaneous compression and storing is the only meaning of the term. CITRIX SURREPLY at 4.

The asserted claims indicate that compression results in an increase in the effective data storage rate of the data storage device. '104 patent at 18:41–52 (claim 1); *id*. at 19:54–63 (claim 13);

[8]The term "increases the effective data storage rate" is contained in claims 1, 13, and 25 of the '104 patent and claims 1 and 9 of the '158 patent.

id. at 20:47–56 (claim 25); '158 patent at 20:4–23 (claim 1); *id*. at 20:52–67 (claim 9). The specifications of the asserted patents disclose two benefits to utilizing data compression: 1) a reduction in the time to transmit data by more efficiently utilizing low bandwidth data links, and 2) a reduction in the amount of memory required to store data by representing the data more efficiently. '104 patent at 2:7–13; '158 patent at 2:11–17. As previously discussed, the asserted patents indicate that the claimed invention solves the problems resulting from low data storage rates of existing memory devices. '104 patent at 2:14–28 ("magnetic disk mass storage devices . . . suffer from significant seek-time access delays along with profound read/write data rate limitations"); '158 patent at 2:18–34 (same). Further, the claimed inventions purport to address this problem by compressing input data. '104 patent at 2:51–67, 3:7; *id*. at 18:41–52 (claim 1); *id*. at 19:54–63 (claim 13); id. at 20:47–56 (claim 25); '158 patent at 2:59–67, 3:1–7; 20:4–23 (claim 1); *id*. at 20:52–67 (claim 9). What these portions of the asserted patents indicate is that the innate data storage rate of the data storage device is not actually increased, but is effectively increased by more efficiently utilizing the bandwidth. In other words, since the data is compressed before being transmitted to the data storage device, the same quantity of information—though compressed and represented by a smaller set of data—is conveyed over the lower bandwidth and written to the data storage device in less time than it could have been uncompressed, thus increasing the effective data storage rate of the data storage device.

Moreover, the prosecution history of the '104 patent further supports this conclusion.[9] In response to an Office Action, the patent applicant explained how the claimed invention effectively increases the data storage rate of a memory storage device:

> [A]ssume that a mass storage device (such as a hard disk) has a data storage rate of 20 megabytes per second. If a data accelerator (e.g.,

[9]The '158 patent was a continuation-in-part of the '104 patent application.

> storage controller) for the mass storage device is capable of compressing (in real time) an input data stream with an average compression ratio of 3:1, then data can be stored in the mass storage device at a rate of 60 megabytes per second, thereby effectively increasing the storage bandwidth (storage rate) of the mass storage device by a factor of three (as well as obtaining a 3 fold increase in the storage capacity of the storage device).

CITRIX RESP., EXH. 2 at FH00006203–04. Again, this excerpt indicates that the same quantity of information—though compressed and represented by a smaller set of data—is conveyed over the lower bandwidth and written to the data storage device in less time than it could have been uncompressed.

The Blue Coat Defendants' proposed construction is defined in terms of the "time" it takes to compress and store, while failing to relate the time required to compress and store to the increase in the effective data storage rate. While the data storage rate is directly related to the time it takes to compress and store, the data storage rate also takes into account the amount of data compressed and stored in that period of time. Thus, merely pointing out the two relevant time periods and comparing them is not sufficient to define the effective increase. Moreover, in section II, *supra*, the Court construed the term "data storage rate" as "the maximum sustained rate at which data can be written to the data storage device." This definition is focused on the "rate" of storing data—not just the relevant time period for storing data. Thus, to construe "increases the effective data storage rate" in terms of comparing the relevant time periods—without taking into account the amount of data compressed in that period of time—would be inconsistent with the Court's construction of "data storage rate."

The Citrix Defendants' proposed construction requires simultaneous compression and storage. The Citrix Defendants argue that because the patent applicant distinguished the claimed invention over the Adelitta reference during prosecution by arguing that Adelitta only taught "a compression method that stores the compressed data in memory only after the compression process is complete," prosecution

history estoppel requires simultaneous compression and storage. CITRIX RESP. at 11. However, the Court disagrees.

When read in its entirety, the prosecution history indicates that the patent applicant considered the increase in the effective data storage rate as the point of novelty which made the invention patentable over Adelitta. This is because Adelitta discloses a data compression scheme which compresses all the data before storing it to memory. CITRIX RESP., EXH. 2 at FH00006205–06. Although Adelitta does provide a decrease in the required memory storage space, an increase in the effective data storage rate may not result because the time required to compress all of the data and subsequently store all the data could be greater than or equal to the time to merely store the uncompressed data due to latency in the overall process. *Id.* ("the Adiletta system may realize a decrease in storage, but such system will not realize 'accelerated data storage' as contemplated by the present invention").[10] Thus, the patent applicant did not regard simultaneous compression and storage as his invention, nor did he argue that as a point of novelty. Instead, the applicant focused on the overall increase in the effective data storage rate resulting from the data compression causing accelerated data storage.

The Citrix Defendants' proposed construction also requires that compression and storage occur faster than the uncompressed data could be stored in real time. The Blue Coat Defendants point to portions of the prosecution history which state that providing accelerated data storage and retrieval at (or close to) real time can reduce or eliminate traditional bottlenecks attributable to data storage devices. CITRIX RESP. at 10 (quoting CITRIX RESP., EXH. 2 at FH00006204). Again, the Court disagrees.

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[10]Plaintiff argues that these portions of the prosecution history were intended to distinguish dependent claim 2 over Adiletta, not asserted claim 1. REPLY at 4–5. However, after discussing Adiletta in the aforementioned sections, the patent applicant noted, "for at least the above reasons, claims 1, 19, and 30 are believed to be non-obvious and patentable over Adiletta." CITRIX RESP., EXH. 2 at FH00006206. Thus, these portions of the prosecution history are applicable to claim 1.

First, the applicant noted storage and retrieval happened at *or close to* real time. So to require real time storage and retrieval would be overly limiting. Second, the Citrix Defendants' proposed construction requires real time storage of the *uncompressed data*, while they argue the patent applicant claimed real time storage of the *compressed data*. *Compare* CITRIX RESP. at 6–7 ("[o]ne of ordinary skill in the art reading the claims, the specification and the file history would understand [that] . . . the phrase "increases the effective data storage rate" means "increasing the maximum storage rate of a storage device by simultaneously compressing and storing the input data stream at a rate *faster than the uncompressed stream can be stored in real time*") (emphasis added) *with id.* at 11 ("[t]he applicant said 'increases the effective data storage rate' in the amended claims requires accelerated data storage which the applicant described as *simultaneously compressing and storing the input data stream at or near real time*"). The applicant argued patentability over Adiletta based on Adiletta's compression of all data, followed by subsequent storage of all data—two wholly distinct and separate steps. The claims do not require real time compression and storage, and neither the specification, nor the prosecution history indicate that the claimed invention is so limited. For these reasons, the Court rejects the Citrix Defendants' proposed construction. Therefore, the Court finds that the term "increases the effective data storage rate" is properly construed as "increases the data storage rate by compressing and storing the data on the data storage device in less time than it would take to simply store the uncompressed data on the data storage device."

IV. "means for receiving a data stream having an input data transmission rate which is greater than a data storage rate of a data storage device"[11]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
Function: receiving a data stream having an input data transmission rate which is greater than a data storage rate of a data storage device Structure: input data buffer or cache 15, counter 20, or encoder module 25	Function: receiving a data stream having an input data transmission rate which is greater than a data storage rate of a data storage device Structure: input data buffer 15 of the data accelerator 10.

The parties agree that this term is in means-plus-function format and therefore is governed by section 112, paragraph 6. CLAIM CHART at 17–18. The parties further agree that the disclosed function is "receiving a data stream having an input data transmission rate which is greater than a data storage rate of a data storage device." *Id.* The parties only dispute the disclosed structure for performing the claimed function.

Plaintiff argues that the specification explicitly notes that in one embodiment input data buffer 15 receives the data stream, which is then sent to counter 20 and then encoder module 25. REPLY at 6. Plaintiff further argues that because the specification then notes that buffer 15 and counter 20 are optional, all three are corresponding structure linked to this claim term. *Id.*

Claim 13 of the '104 patent discloses:

> 13. A system for accelerating the rate of data storage and retrieval of a data storage device, comprising:

[11]The parties identified the term "means for receiving a data stream" for argument at the *Markman* hearing. PARTIES' JOINT SUBMISSION OF TERMS TO BE HEARD AT MARKMAN HEARING ("TERMS FOR HEARING") (Doc. No. 263) at 2. However, the parties dispute the term "means for receiving a data stream having an input data transmission rate which is greater than a data storage rate of the data storage device," so the Court will construe this term. *See* NOTICE OF FILING OF JOINT CLAIM CONSTRUCTION CHART, EXH. A ("CLAIM CHART") at 29–30. The term "means for receiving a data stream having an input data transmission rate which is greater than a data storage rate of a data storage device" is contained in claim 13 of the '104 patent.

> **means for receiving a data stream having an input data transmission rate which is greater than a data storage rate of the data storage device**;
> means for compressing the data stream at a compression rate that increases the effective data storage rate of the 60 data storage device; and
> means for storing the compressed data stream in the data storage device.

'104 patent at 19:54–63 (claim 13). The specification of the '104 patent further indicates that, "[t]he data storage accelerator 10 receives and processes data blocks from an input data stream," *id.* at 5:20–21, and "[i]n order to achieve continuous data storage acceleration, the data storage accelerator 10 must be configured to compress a given input data block at a rate that is equal to or faster than receipt of the input data." *Id.* at 5:24–27. The specification later expands on this:

> [T]he data storage accelerator 10 accepts data blocks from an input data stream and stores the input data block in an input buffer or cache 15. It is to be understood that the system processes the input data stream in data blocks that may range in size from individual bits through complete files or collections of multiple files. Additionally, the input data block size may be fixed or variable. A counter 20 counts or otherwise enumerates the size of [an] input data block in any convenient units including bits, bytes, words, [or] double words. It should be noted that the input buffer 15 and counter 20 are not required elements of the present invention.

'104 patent at 11:28–36. Thus, the specification links data storage accelerator 10 to the claimed function of receiving a data stream having an input data transmission rate which is greater than a data storage rate of a data storage device.

Plaintiff argues that input data buffer 15 receives the data stream, which is then sent to counter 20 and encoder module 25. REPLY at 5–6. Plaintiff further asserts that because buffer 15 and counter 20 are optional in this embodiment, counter 20 and encoder module 25 may also receive the data stream. *Id.* However, in the sections quoted above, the specification of the '104 patent discloses that data storage accelerator 10 accepts the data blocks from the input data stream. '104 patent at 5:20–21;

id. at 11:28–30. The components identified by Plaintiff—data buffer 15, counter 20, and encoder module 25—among other components, make up data storage accelerator 10. *See* '104 patent, FIG. 8.

Further, these components identified by Plaintiff receive the data blocks from the data stream, after the data storage accelerator has accepted the data stream, '104 patent at 11:28–30, 34–38, 56–58, and the specification distinguishes data blocks from the data stream. '104 patent at 6:38–40 ("the initial input data block in the input data stream"); *id*. at 11:30–31 ("the system processes the input data stream in data blocks"); *see also id*. at Figs. 2, 6a, 6b, 8, 9. Further, the disclosed role of the additional components identified by Plaintiff is not to receive a data stream counter 20 counts data blocks; input buffer 15 stores data blocks; and encoder module 25 receives data blocks. '104 patent at 28–30 ("the data storage accelerator 10 . . . stores the input data block in an input buffer or cache 15"); *id*. at 34–36 ("counter 20 counts or otherwise enumerates the size of input data block"); *id*. at 56–58 ("encoder module 25 successively receives as input each of the buffered input data blocks (or unbuffered input data blocks from the counter module 20)"); *but see id*. at 11:38–40 ("[t]he input data buffer 15 may be provided for buffering the input data stream in order to output an uncompressed data stream"). While these components receive data blocks from the input data stream, the only means disclosed in the specification for receiving *a data stream* having an input data transmission rate which is greater than a data storage rate of a data storage device is data storage accelerator 10. Therefore, the Court finds that the means for performing the agreed function—receiving a data stream having an input data transmission rate which is greater than a data storage rate of a data storage device—is an input data port of data accelerator 10 and equivalents thereof.

V. "means for compressing the data stream at a compression rate that increases the effective data storage rate of the data storage device"[12]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
Function: compressing the data stream at a compression rate that increases the effective data storage rate of the data storage device Structure: encoder module 25	Function: compressing the data stream at a compression rate that increases the effective data storage rate of the data storage device Structure: Data compression portion of data storage accelerator 10, including encoder module 25, counter module 20, buffer/counter module 30, and compression [ratio] module 35

Here, the parties again agree that this term is in means-plus-function format and therefore is governed by section 112, paragraph 6. CLAIM CHART at 18–19. The parties further agree that the disclosed function is "compressing the data stream at a compression rate that increases the effective data storage rate." *Id.* The parties only dispute the disclosed structure for performing the claimed function.

Plaintiff argues that counter 20, buffer/counter 30, and compression ratio module 35 are clearly linked to functions other than compression, and therefore Defendants' proposed construction improperly includes these structures. REPLY at 6. Defendants argue that the function of "increas[ing] the effective data storage rate of the data storage device" is set forth in the claim, and the specification links the structures identified in Defendants' construction as required. BLUE COAT SURREPLY at 3. Further, Defendants argue that Plaintiff's proposed structure would not necessarily result in an increase in the effective data storage rate. *Id.*

[12]The parties identified the term "means for compressing the data stream" for argument at the *Markman* hearing. TERMS FOR HEARING at 2. However, the parties dispute the term "means for compressing the data stream at a compression rate that increases the effective data storage rate of the data storage device," so the Court will construe this term. *See* CLAIM CHART at 30. The term "means for compressing the data stream at a compression rate that increases the effective data storage rate of the data storage device" is contained in claim 13 of the '104 patent.

As previously noted, claim 13 of the '104 patent discloses:

> 13. A system for accelerating the rate of data storage and retrieval of a data storage device, comprising:
>
> means for receiving a data stream having an input data transmission rate which is greater than a data storage rate of the data storage device;
>
> **means for compressing the data stream at a compression rate that increases the effective data storage rate of the data storage device**; and
>
> means for storing the compressed data stream in the data storage device.

'104 patent at 19:54–63 (claim 13). The specification of the '104 patent discloses that data compression is performed by encoder module 25. '104 patent at 11:44-45 ("[d]ata compression is performed by an encoder module 25"); *see also id.* at 11:58–61 ("[d]ata compression is performed by the encoder module 25 wherein each of the encoders E1 . . . En processes a given input data block and outputs a corresponding set of encoded data blocks"). The specification also discloses that compression results in a reduction in the time required to transmit data by more efficiently utilizing low bandwidth data links—an increase in the effective data storage rate of the data storage device. '104 patent at 2:7–13. Thus, encoder module 25 compresses the data stream at a compression rate that increases the effective data storage rate of the data storage device.

Defendants argue that the structure linked to this function includes not only encoder module 25, but also counter module 20, buffer/counter module 30, and compression module 35. However, counter module 20, buffer/counter module 30, and compression module 35 are components which enable data storage accelerator 10 to determine if at least one of the encoded data blocks output from the enabled encoders achieves a compression that exceeds an a priori-specified threshold—a threshold indicating whether the compression achieved the desired results. '104 patent at 12:30–35. Counter 20 "counts or otherwise enumerates the size of input data block in any convenient units including bits,

bytes, words, double words." '104 patent at 11:34–36. Buffer/counter module 30 "is operatively connected to 20 the encoder module 25 for buffering and counting the size of each of the encoded data blocks output from encoder module 25." '104 patent at 12:19–22. Finally, with regard to compression ratio module 35:

> [Compression ratio module 35] determines the compression ratio obtained for each of the enabled encoders E1 . . . En by taking the ratio of the size of the input data block to the size of the output data block stored in the corresponding buffer/counters BC1 . . .BCn [and] compares each compression ratio with an a priori-specified compression ratio threshold limit to determine if at least one of the encoded data blocks output from the enabled encoders E1 . . . En achieves a compression that exceeds an a priori-specified threshold.

'104 patent at 12:25–35. Thus, none of these components—counter module 20, buffer/counter module 30, or compression module 35—comprise a means for compressing the data stream at a compression rate that increases the effective data storage rate of the data storage device. The structure specifically linked to this function is solely encoder module 25. Therefore, the Court finds that the means for compressing the data stream at a compression rate that increases the effective data storage rate is encoder module 25 and equivalents thereof.

VI. "data type"[13]

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
an attribute of the data	the manner in which a sequence of bits represents data

Plaintiff argues that the specification discloses various ways that the data type can be identified, including recognizing a data structure or data format and that the term "data type" is simply

[13]The term "data type" is contained in claims 1, 2, and 3 of the '761 patent; claims 1, 5, 6, 7, 8, 41, and 42 of the '506 patent; claims 1, 4, 7, 8, 9, 10, 11, 12, and 20 of the '992 patent; and claims 19, 21, 23, 24, 42, 46, and 47 of the '300 patent.

an indicator of the content which forms the basis of associating certain data with an appropriate encoder for compression. REPLY at 8. Thus, Plaintiff contends that a data structure or data format may be the data type, while in other instances these parameters may be indicative of the data type. *Id*. at 8.

The Blue Coat Defendants argue that the specification discloses a variety of parameters that may be indicative of what data compression algorithm to use—data types, data structures, data block formats, file substructures, file types, and other parameters—and that Plaintiff chose to claim only data types. BLUE COAT SURREPLY at 4. The Blue Coat Defendants also argue that their proposed construction does not preclude user-defined data types. *Id*. at 5.

The Citrix Defendants argue that the claims distinguish between generically "identifying" a data type and specifically "recognizing" a data type, by either recognizing the data type directly or by recognizing other attributes that might indicate the data type, such as data structures, data block formats, file substructures, or file types, among others. CITRIX SURREPLY at 4–5.

The claims of the asserted patents indicate that one step of the claimed methods includes identifying one or more data types of a data block or determining if the data type is identified. *E.g.*, '761 patent at 26:49–60 (claim 1);[14] '506 patent at 26:55–65 (claim 1);[15] '992 patent at 26:50–62 (claim 1); *id*. at 27:20–38 (claim 11); '300 patent at 27:65–67, 28:1–17 (claim 19). Asserted claim 2 of the '761 patent depends from claim 1 and discloses "[t]he method of claim 1, wherein the step of analyzing the data block comprises one of analyzing the data block to recognize one of a data type, data structure, data block format, file substructure, file types and a combination thereof." '761 patent at 26:61–65.

[14]Claim 2 of the '761 patent depends from claim 1, while claim 3 depends from claim 2.

[15]The remainder of the asserted claims of the '506 patent depend from claim 1.

The specification sets forth that a "data type" is identified in order to associate the data type with an encoder that can effectively encode the data, referred to within the patent as "content dependent data compression." '761 patent at 4:6–21. The patentee described the problems with the current art, as it relates to data types, in the following manner: "[o]ne fundamental problem encountered with most lossless data compression techniques are their content sensitive behavior [which is] referred to as data dependency [implying] that the compression ratio achieved is highly contingent upon the content of the data being compressed." '761 patent at 2:15–20. The '761 patentee then goes on to describe how this problem is solved by the claimed invention:

> The present invention is directed to systems and methods for providing fast and efficient data compression using a combination of content independent data compression and content dependent data compression. In one aspect of the invention, a method for compressing data comprises the steps of: analyzing a data block of an input data stream to identify a data type of the data block, the input data stream comprising a plurality of disparate data types; performing content dependent data compression on the data block, if the data type of the data block is identified

'761 patent at 3:44–55. In the specification of the '761 patent, the patentee also discusses "data types" existing in the prior art:

> While [data types] might include such common data types as ASCII, binary, or unicode, there, in fact, exists a broad universe of data types that fall outside the three most common data types. Examples of these alternate data types include: signed and unsigned integers of various lengths, differing types and precision of floating point numbers, pointers, other forms of character text, and a multitude of user defined data types.

'761 patent at 3:23–30.; *see also* CITRIX RESP., EXH. 12 at RD0033458–459 (listing different data types, including ASCII, image data, multimedia data, signed and unsigned integers, and pointers). Finally, the patentee notes that "a multitude of data types may be present within a given input data block." '761 patent at 13–14. These portions of the claims and specification show that the term

"data type" is used broadly in the context of the asserted patents. Further, one skilled in the art would understand this term to not be restricted to any particular data structure or format.

While Defendants are correct that the compression algorithms execute on the basis of the way in which symbols are represented by a sequence of bits, Defendants' proposed construction neither fits into the context of the language, nor will further assist the jury in understanding the claim language. The Court finds that "data type" is neither unfamiliar, confusing, nor affected by the specifications or prosecution history of the asserted patents. The term "data type" will not be unfamiliar to the jury since the term is a familiar and commonplace word used in everyday language by lay jurors. The term is not confusing because the lay meaning of this term is the same meaning as that which a person having ordinary skill in the art would attribute to the term. Furthermore, there is no evidence that the specifications or the prosecution history intended that a different meaning attach to this term. For all the foregoing reasons, the Court finds that the term "data type" does not require construction.

VII. "content independent data compression"[16]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
compression only applied to a given data block when the data type of the data block is not identified or that data type is not correlated with one or more encoders	compressing a particular data block of unidentified data type with each of a plurality of enabled lossless encoding techniques and comparing the compression results thereof to select the optimal encoder[17]

[16]Although the parties identified the terms "content independent data compression" and "content dependent data compression" as separate terms for construction, the Court here addresses them together due to the relationship between the two terms as disclosed by the asserted patents. The term "content independent data compression" is contained in claim 1of the '761 patent. The term "content dependent data compression" is contained in claim 1 of the '761 patent and claims 1, 5, 6, 7, 8, 9, 10, 11, 41, 42, 43, 86, 87, 88, 89, 90, and 98 of the '506 patent.

[17]The Court notes that the Blue Coat Defendants proposed a different construction in their Response. BLUE COAT RESP. at 16–19. However, in the parties' Claim Chart—filed over two weeks after the Blue Coat Defendants' Response—only one proposed construction is set forth for the Defendants. CLAIM CHART at 36–37. Therefore, the Court uses the proposed construction set forth in the Claim Chart as submitted by all Defendants.

"content dependent data compression"[18]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
compression only applied to a given data block when the data type of the data block is identified and that data type is correlated with one or more encoders	compressing the data block using an encoder selected based on the data type of the data block

Plaintiff argues that the specification explains that content independent data compression can use just one encoder. REPLY at 9. Plaintiff further argues that this is affirmed by looking at the dependent claims which specifically disclose a plurality of encoders. *Id.* at 10. Finally, Plaintiff argues that Defendants' reading of the prosecution history is flawed. *Id.* at 10–11. The Citrix Defendants argue that the term "content independent data compression" was a term that had no meaning when Plaintiff used it for the first time in the original patent application. CITRIX SURREPLY at 6. Thus, the Citrix Defendants argue that Plaintiff explicitly defined the term to the patent examiner during prosecution as a means of distinguishing the prior art based on the "single encoder" used by the cited prior art. *Id.*

With respect to content dependent data compression, Plaintiff argues that Defendants' proposed construction "inherently requires" that the data type be identified before an encoder can be selected. OPENING at 15. In response, Defendants argue that their construction properly describes what content dependent data compression is, while Plaintiff's proposed construction describes when content dependent data compression is used. BLUE COAT RESP. at 23.

The claimed invention in the '761 patent is described as being "directed to systems and methods for providing fast and efficient data compression using a combination of content independent data

[18]The term "content dependent data compression" is contained in claim 1 of the '761 patent and claims 1, 5, 6, 7, 8, 9, 10, 11, 41, 42, 43, 86, 87, 88, 89, 90, and 98 of the '506 patent.

compression and content dependent data compression." '761 patent at 3:44–47. The claims and specification consistently note the differences between content dependent data compression and content independent data compression. Content dependent data compression is described as compression applied "if the data type of the data block is identified," *id.* at 3:53–55, while content independent data compression is described as compression applied "if the data type of the data block is not identified." *Id.* at 3:54–55; 4:22–2; *see also id.* at 26:49–60 (claim 1); *id.* at 27:60–67, 28:1–9 (claim 9). In the Detailed Description of the Invention section, the specification later adds another description of content independent data compression: "content independent data compression is applied to a data block when the content of the data block cannot be identified or is not associable with a specific data compression algorithm." *Id.* at 16:4–7; *see also id.* at 18:14–17.

The specification further explains that the incoming data stream is analyzed to recognize certain parameters that may be indicative of the data type or content, as well as the appropriate data compression algorithm or algorithms. *Id.* at 16:26–32. Then, "[e]ach data block that is recognized by the content data compression module 1300 is routed to a content dependent encoder module 1320, if not the data is routed to the content independent encoder module 30." *Id.* at 16:35–39. The specification goes on to describe the steps involved in performing content independent data compression:

> [T]he step of performing content independent data compression comprises: encoding the data block with a plurality of encoders to provide a plurality of encoded data blocks; determining a compression ratio obtained for each of the encoders; comparing each of the determined compression ratios with a first compression threshold; selecting for output the input data block and appending a null compression descriptor to the input data block, if all of the encoder compression ratios do not meet the first compression threshold; and selecting for output the encoded data block having the highest compression ratio and appending a corresponding compression type

> descriptor to the selected encoded data block, if at least one of the compression ratios meet the first compression threshold.

Id. at 3:59–67, 4:1–5. Another set of steps involved in performing content independent data compression are described in the specification:

> [T]he step of performing content independent data compression on the data block, if the data type of the data block is not identified, comprises the steps of: estimating a desirability of using of [sic] one or more encoder types based one [sic] characteristics of the data block; and compressing the data block using one or more desirable encoders.

Id. at 4:22–28.

In contrast, the steps involved in performing content dependent data compression includes a step where encoders are selected based on an association with the data type:

> [T]he step of performing content dependent compression comprises the steps of: selecting one or more encoders associated with the identified data type and encoding the data block with the selected encoders to provide a plurality of encoded data blocks; determining a compression ratio obtained for each of the selected encoders; comparing each of the determined compression ratios with a second compression threshold; selecting for output the input data block and appending a null compression descriptor to the input data block, if all of the encoder compression do not meet the second compression threshold; and selecting for output the encoded data block having the highest compression ratio and appending a corresponding compression type descriptor to the selected encoded data block, if at least one of the compression ratios meet the second compression threshold.

Id. at 4:6–21. Another set of steps for performing content dependent data compression are described later in the specification:

> [T]he step of performing content dependent data compression on the data block, if the data type of the data block is identified, comprises the steps of: estimating a desirability of using of one or more encoder types based on characteristics of the data block; and compressing the data block using one or more desirable encoders.

Id. at 4:28–34. These sections of the specification indicate that content dependent data compression is applied to identified data types based on the encoder's ability to effectively compress the data type, while content independent data compression is applied to data types that are not identified in order to attempt to achieve efficient compression despite the fact that the resulting compression ratio is neither certain, nor foreseeable.

The parties dispute whether content independent data compression requires multiple encoders in order to compare the resulting compression ratios. The claims and specification indicate that content independent data compression may be applied using a single encoder. The specification sets forth that "[i]t is to be appreciated that the system affords a user the option to enable/disable any one or more of the encoders E1 . . . En prior to operation." *Id.* at 7:21–24. The specification puts no limits on the users ability to disable encoders. Thus, in systems with multiple encoders, the user could disable E1 though En-1 encoders, leaving only one enabled.

Further, the unasserted claims of the '761 patent distinguish between systems using one or more encoders and systems using a plurality of encoders. Claim 12 depends from claim 9 and sets forth that content independent data compression is applied using a "plurality of encoders." *Id.* at 28:19–36. Claim 15, which also depends from claim 9, however sets forth that content independent data compression is applied using "one or more desirable encoders." *Id.* at 28:64–67, 29:1–4. Noting the importance of both asserted and unasserted claims in properly construing claim terms, the Federal Circuit has noted that "[d]ifferences among claims can also be a useful guide in understanding the meaning of particular claim terms." *Phillips*, 415 F.3d at 1314 (citations omitted). As noted, both claims 12 and 15 depend from claim 9, which fails to disclose any limitations on the encoders used to compress the data. *See id.* at 27:60–67, 28:1–10; *see also id.* at 26:49–60 (claim 1, which sets forth no limitation the number of encoders), 27:39–47 (claim 6, which depends from claim 1 and discloses

"one or more encoders"). Because claims 12 and 15 both set forth different limitations regarding the number of encoders used for compressing data, the Court presumes that this distinction is material and therefore content independent data compression can be performed using one or more encoders. Further, having fully reviewed the claims and specifications, the Court finds that the patents do not indicate that the patentee was acting as a lexicographer in defining these terms.

Defendants argue that the patentee expressly disclaimed the use of a single encoder during prosecution. Defendants point to the prosecution history for the parent application of the '761 patent. The '761 patent resulted from a continuation-in-part application filed from what is now U.S. Patent No. 6,309,424 ("the '424 patent"), which bears the same title as the '761 patent. Pointing to the applicant's response to an office action on the application that would become the '424 patent—application number 09/705,446 ("the '446 application")—Defendants argue that the applicant specifically distinguished the prior art based on the "single encoder" used by the prior art. CITRIX SURREPLY at 6. However, the Court does not read the prosecution history to include such a disclaimer.

Looking closely at these portions of the prosecution history, the applicant distinguished the prior based on the single encoding technique—or method—disclosed in the prior art. The patent examiner initially rejected claim 8 of the'446 application as being anticipated by Kulakowski. CITRIX RESP., EXH. 11 at RD00335452. In response, the applicant argued that Kulakowski did not anticipate the claimed invention because "Kulakowski does not disclose or suggest compressing the [data blocks] using *a plurality of different encoder types*." CITRIX RESP., EXH. 12 at RD00335460 (emphasis added); *see also id.* ("Kulakowski [] uses knowledge of the data types . . . to determine [certain information] required to store the . . . data . . . knowing . . . the compression ratio that may be obtained using a particular (i.e., single) *encoding technique*") (emphasis added); *id.* at RD00335461

("Kulakowski only uses a single data compression method for all the data blocks") (original emphasis). The patent applicant distinguished Kulakowski based on its use of a single encoding technique, not based on the number of encoders used, which is not addressed by this portion of the prosecution history. Moreover, Kulakowski teaches splitting the data stream into separate blocks which are arranged into data transfer units that are compressed using a single compression method. The '446 application, in contrast, disclosed compressing a data stream using one or more encoders without regard to the content of the data stream. Thus, Defendants' argument that the patentee was acting as his own lexicographer in defining content independent data compression as requiring multiple encoders is incorrect. The patentee did not indicate that content independent data compression required multiple encoders, but that the prior art disclosed the use of a single encoding technique or method.

The '446 application was directed at systems and methods for providing content independent lossless data compression and decompression. *See* CITRIX RESP., EXH. 12 at 5 ("a novel feature of the present invention is that it provides content-independent data compression, wherein an optimal compression ratio for an encoded stream can be achieved regardless of the data content of the input data stream"). The '761 patent, however, is directed at systems and methods for providing fast and efficient data compression using a combination of content independent data compression and content dependent data compression. *See* '761 patent at 3:44–47. Thus, even if the applicant had disclaimed the use of a single encoder in the '446 application, the subject matter added to the '761 patent when the continuation-in-part application was filed would not necessarily limit the '761 patent to a single encoder because the new subject matter added to the '761 patent resulted in claim scope that differs from the '446 application. *See, e.g.,* '761 patent at 27:39–46 (claim 6); 28:64–67 (claim 15). Thus, the '761 patent would not be limited by the prosecution history of the '446 application as to the additional

subject matter added to the '761 patent. As a result, the Court finds that Defendants' proposed construction is improper.

Yet, Plaintiff's proposed constructions suffer from deficiencies as well. Plaintiff's proposed construction for content independent data compression identifies when it is applied, without explaining what the process involves. *See* OPENING at 15 ("The specification [] explicitly teaches that 'content independent data compression' is only applied to a data block *when* data type [sic] is not identified or when data type has no associated encoder.") (emphasis added). Plaintiff's proposed construction for content dependent data compression suffers from a similar problem. Thus, the Court rejects Plaintiff's proposed constructions.

As previously noted, the claims and specification indicate that content dependent data compression is applied to identified data types in order to efficiently compress the data, while content independent data compression is applied to data types that are not identified in order to attempt to achieve efficient compression despite that fact that the resulting compression ratio is neither certain, nor foreseeable. As a result, the Court finds that the term "content independent data compression" is properly construed as "compression that is applied using one or more encoders without regard to the encoder's (or encoders') ability to effectively encode the data type of the data block." Similarly, "content dependent data compression" is properly construed as "compression that is applied using one or more encoders selected based on the encoder's (or encoders') ability to effectively encode the data type of the data block."

VIII. "single data compression encoder"/"single compression encoder"/"a data compression encoder"/"wherein if one or more encoders is associated to said type, compressing said data block with at least one of said one or more encoders, else compressing with a data compression encoder"/"said data compression encoder"/"default encoder"

"single data compression encoder"/"single compression encoder"[19]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
one data compression encoder	compression using content independent data compression

"a data compression encoder"[20]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
one or more data compression encoders	compression using content independent data compression

"wherein if one or more encoders is associated to said type, compressing said data block with at least one of said one or more encoders, else compressing with a data compression encoder"[21]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
wherein if one or more encoders is correlated with said type, compressing said data block with at least one of said one or more encoders, otherwise compressing with one or more data compression encoders	wherein if one or more encoders is linked through hardware or software instructions to said data type, compressing said data block with at least one of said one or more encoders, else compressing using content independent data compression

[19]The term "single data compression encoder"is contained in claims 1, 27, 69, 86, 87, 88, 89, 90, 96, and 98 of the '506 patent.

[20]The term "a data compression encoder" is contained in claim 69 of the '506 patent.

[21]The term "wherein if one or more encoders is associated to said type, compressing said data block with at least one or said one or more encoders, else compressing with a data compression encoder" is contained in claim 69 of the '506 patent.

"said data compression encoder"[22]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
a data compression encoder referred to in claim 69	compression using content independent data compression

"default encoder"[23]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
an encoder used automatically in the absence of a designated alternative	compression using content independent data compression

The asserted patents disclose embodiments that include encoders that use both content dependent and content independent data compression, as well as embodiments that include encoders that use only one of the two compression methods. '506 patent at FIG. 13A (depicting both content dependent and content independent encoders); id. at Figs. 14A, B, C, D (same); *id.* at 15A, B (same); *id.* at 8:9–40 (discussing the system disclosed in figures 2, 3a, and 3b, which discloses only content independent data compression); *id.* at 9:32–67, 10:1–11 (same with regard to figures 4, 5a, and 5b). Thus, the patents indicate that encoders do not just use content independent data compression, but also utilize content dependent data compression.

Therefore, the Court finds that the terms "single data compression encoder" and "single compression encoder" are properly construed as "one data compression encoder." The term "wherein if one or more encoders is associated to said type, compressing said data block with at least one of said one or more encoders, else compressing with a data compression encoder" is properly construed as "wherein if one or more encoders is correlated with said type, compressing said data block with at least

[22]The term "said data compression encoder" is contained in claim 81 of the '506 patent.

[23]The term "default encoder" is contained in claims 12, 15, and 20 on the '992 patent.

one of said one or more encoders, otherwise compressing with one or more data compression encoders." The term "said data compression encoder" is properly construed as "a data compression encoder referred to in claim 69," and the term "default encoder" is properly construed as "an encoder used automatically in the absence of a designated alternative."

IX. "data stream"[24]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
one or more data blocks transmitted in sequence	a contiguous stream of data blocks

Plaintiff argues that the specification explicitly discloses that a data stream may be comprised of one or more data blocks. REPLY at 15. Further, Plaintiff argues that one of ordinary skill in the art would understand that a data stream must be "transmitted" to constitute a stream. *Id.* The Court notes that Defendants do not address this term in their briefing. Although Defendants propose a construction for this term, CLAIM CHART at 40–45, and it was identified by the parties for construction, NOTICE OF TERMS at 2.

The claims of the asserted patent indicate that the "data stream" is received at an input data transmission rate which is greater than a data storage rate of a target storage device. *See, e.g.*, '104 patent at 18:45–47 (claim 1); '158 patent at 20:8–10 (claim 1). The claims further indicate that a data stream is comprised of data blocks and may also include other data. '300 patent at 28:32–38 (claim 24); *id.* at 30:24–26(claim 51); '761 patent at 26:49–60 (claim 1); '506 at 31:53–62 (claim 69).

[24]The term "data stream" is contained in claims 1, 2, 13, and 25 of the '104 patent; claims 1, 6, 9, and 14 of the '158 patent; claims 24, 28, 47, and 51 of the '300 patent; claims 17, 18, 19, and 20 of the '937 patent; claims 1, 17, and 21 of the '761 patent; and claims 69 and 86 of the '506 patent.

The specifications of the asserted patents also indicate that a data stream is comprised of data blocks. '104 patent at 8:24–28 ("the retrieved data stream is comprised of one or more data blocks that may range in size from individual bits through complete files or collections of multiple files"); *see also* '158 patent at 7:52–53. These successive data blocks comprise the data stream. '300 patent at 9:4–8 ("[i]f the input data stream includes additional data blocks . . . , the next successive data block is received"); *id.* at 10:48–50 ("the data compression process is iterated for each successive data block in the input data stream"). Finally, the data stream is transmitted as a sequence of data blocks. *See generally* '300 patent at 6:51–53 ("[t]he data compression system includes a counter module 10 that receives as input an uncompressed or compressed data stream"); '300 patent at 1:55–57 ("[d]ata compression is widely used to reduce the amount of data required to process, transmit, or store a given quantity of information"). Therefore, the Court finds that the proper construction for "data stream" is "one or more data blocks transmitted in sequence."

X. "input data stream"/"receiving a data stream"[25]

"input data stream"

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
one or more data blocks transmitted in sequence where the transmission of the sequence is not initiated by the receiver	a contiguous stream of incoming data blocks

[25]The terms "input data stream" and "receiving data stream" are contained in claims 1, 13, and 25 of the '104 patent; claims 1 and 9 of the '158 patent; claim 17 of the '937 patent; claims 1 and 17 of the '761 patent; and claims 1, 16, 17, and 21 of the '506 patent.

"receiving a data stream"

Plaintiff's Proposed Construction	**Blue Coat Defendants' Proposed Construction**	**Citrix Defendants' Proposed Construction**
one or more data blocks transmitted in sequence where the transmission of the sequence is not initiated by the receiver	receiving a contiguous stream of data blocks	a contiguous stream of incoming data blocks

As to what is disclosed in the patent, the parties seem to agree that claims and specification do not explicitly require initiation by the receiver. The claims of the asserted patents indicate that the data blocks of an input data stream are analyzed to identify data type. '761 patent at 26:52–54 (claim 1); '506 patent at 58–60. The claims also indicate that a data stream is received over a first bandwidth or at an input data transmission rate greater than a data storage rate of the data storage device. '104 patent at 18:45–47 (claim 1); '158 patent at 20:8–10 (claim 1); '937 patent at 20:10–11 (claim 17). Along with the specifications of the asserted patents, the claims fail to indicate whether the data is passively received or not. The specification of the '506 patent indicates that:

> The data compression system includes a counter module 10 that receives as input an uncompressed or compressed data stream. It is to be understood that the system processes the input data stream in data blocks that may range in size from individual bits through complete files or collections of multiple files.

'506 patent at 6:57–62. The specification of the '104 patent similarly indicates that "[t]he data storage accelerator 10 receives and processes data blocks from an input data stream." '104 patent at 5:20–21. Later, the specification further states that "the initial input data block in the input data stream . . . is input into and compressed by the data 40 storage accelerator 10." '104 patent at 38–40. As a result of the patent's silence as to this issue, it would be improper to read in Plaintiff's proposed limitation requiring that the transmission not be initiated by the receiver.

The Court has already determined that the proper construction for "data stream" is "one or more data blocks transmitted in sequence." As to the terms "input data stream" and "receiving a data stream," the Court finds that there is no dispute among the parties as to the scope of the terms "input" and "receiving, " and moreover, these words are neither unfamiliar, confusing, nor affected by the specifications or prosecution history of the asserted patents. These terms will not be unfamiliar to the jury since "input" and "receiving" are familiar and commonplace words used in everyday language by lay jurors. The terms are not confusing because the lay meanings are the same as that which a person having ordinary skill in the art would attribute to the terms. Furthermore, there is no evidence that the specifications or the prosecution history intended that a different meaning attach to this terms. Therefore, the Court finds that the proper construction for "input data stream" is "one or more input data blocks transmitted in sequence," and the proper construction for "receiving a data stream" is "receiving one or more data blocks transmitted in sequence."

XI. "selecting resolution parameters"[26]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
selecting the number of pixels in an image, the number of samples in a second of audio, and/or the number of bits per sample for audio or for images	selecting the number of pixels in an image

Claim 19 of the '300 patent discloses:

> 19. A method comprising:
> analyzing a data block to identify a data type of said data block from a plurality of data types;
> **selecting resolution parameters**;
> associating a first lossy compression encoder to a first one of said plurality of data types;
> associating a second lossy compression encoder to a second one

[26]The term "selecting resolution parameters" is contained in claims 19 and 42 of the '300 patent.

> of said plurality of data types;
>
> performing a first data compression, wherein said first data compression comprises compressing said data block with said first lossy compression encoder if said data type is identified as said first one of said plurality of data types, wherein said first lossy compression encoder compresses said data block at said selected resolution parameters; and
>
> performing a second data compression, wherein said second data compression comprises compressing said data block with said second lossy compression encoder if said data type is identified as said second one of said plurality of data types.

'300 patent at 27:65–67, 28:1–17 (claim 19). In the background section of the '300 patent, the patentee describes the need for increased capacity for digital data processing, storage, and transmittal resulting from representing continuous information such as speech, music, audio, images, and video as digital data. *Id.* at 1:31–40, 51–53. The patentee later specifically refers to a content dependent encoder module for audio files. *Id.* at 16:40–49. Throughout the remainder of the specification, the patentee describes uncompressed and compressed data generally, not specifying what type of data is represented within the data stream or data blocks.

Because the claims and specification of the '300 patent fail to limit the term "selecting resolution parameters" to the resolution parameters of an image and on of ordinary skill in the art would understand the term to not be limited to the resolution parameters of an image, the Court rejects Defendants' proposed construction. The Court finds that the proper construction for "selecting resolution parameters" is "selecting the number of pixels in an image, the number of samples in a second of audio, and/or the number of bits per sample for audio or for images."

XII. "wherein said lossy compression encoder compresses said data block at said selected resolution parameters"[27]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
wherein said first lossy compression encoder compresses said data block according to selected number of pixels in an image, number of samples in a second of audio, and/or number of bits per sample for audio or for images	wherein said first lossy compression encoder compresses said data block to achieve the selected number of pixels in an image

In light of the Court's previous determination that the proper construction for "selecting resolution parameters" is "selecting the number of pixels in an image, the number of samples in a second of audio, and/or the number of bits per sample for audio or for images," the Court finds that the proper construction for "wherein said first lossy compression encoder compresses said data block at said selected resolution parameters" is "wherein said first lossy compression encoder compresses said data block according to selected number of pixels in an image, the number of samples in a second of audio, and/or the number of bits per sample for audio or for images."

[27]The parties identified the term "lossy compression encoder compresses said data block at said selected resolution parameters" for argument at the *Markman* hearing. TERMS FOR HEARING at 2. However, the parties dispute the term "wherein said lossy compression encoder compresses said data block at said selected resolution parameters," so the Court will construe this term. *See* CLAIM CHART at 50–51. The term "wherein said lossy compression encoder compresses said data block at said selected resolution parameters" is contained in claims 19 and 42 of the '300 patent.

XIII. "desirability factor"[28]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
a user or system specified factor that indicates the desirability of using a specific encoder. Desirability factor does not include compression threshold.	an a priori user specified factor that takes into account any number of user considerations including, but not limited to, compatibility of the encoded data with existing standards, data error robustness, or any other aggregation of factors that the user wishes to consider for a particular application that is appended to each encoded data block and that is used to calculate a figure of merit for each encoded data block

The term "desirability factor" appears in claim 36 of the '300 patent, which depends from claim 19, discussed in section XI, *supra*. Claim 36 discloses, "[t]he method of claim 19, further comprising associating a desirability factor to said second lossy encoder." '300 patent at 29:8:–9. The specification adds:

> Since a multitude of data types may be present within a given input data block, it is often difficult and/or impractical to predict the level of compression that will be achieved by a specific encoder. Consequently, by processing the input data blocks with a plurality of encoding techniques and comparing the compression results, content free data compression is advantageously achieved. . . . [T]he embodiment 30 of FIG. 4 includes an enhanced metric functionality for selecting an optimal encoding technique. In particular, each of the encoders E1 . . .En in the encoder module 30 is tagged with a corresponding one of user-selected encoder desirability factors 70. Encoder desirability is defined as an a priori user specified factor that takes into account any number of user considerations including, but not limited to, compatibility of the encoded data with existing standards, data error robustness, or any other aggregation of factors that the user wishes to consider for a particular application. Each encoded data block output from the encoder module 30 has a corresponding desirability factor appended thereto. A figure of merit module 80 . . . is provided for calculating a figure of merit for each of the encoded data blocks which possess a compression ratio greater than the compression ratio threshold

[28]The term "desirability factor" is contained in claim 36 of the '300 patent.

> limit. The figure of merit for each encoded data block is comprised of a weighted average of the a priori user specified threshold and the corresponding encoder desirability factor.

'300 patent at 13–50. In this section of the specification, the patentee explicitly defined the term "desirability factor" in the specification of the '300 patent. Therefore, Court finds that the proper construction for "desirability factor" is "an a priori user specified factor that takes into account any number of user considerations including, but not limited to, compatibility of the encoded data with existing standards, data error robustness, or any other aggregation of factors that the user wishes to consider for a particular application."

XIV. "data compression engine"[29]

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
hardware, software and/or firmware that compresses and/or decompresses data or is programmed to compress and/or decompress data	hardware, software, or firmware in the DSP or processor of the data storage controller that compresses and/or decompresses the data

At the hearing, the parties were able to reach agreement as to the proper construction of "data compression engine." REALTIME DATA AND F5'S JOINT NOTICE OF AGREEMENT TO CLAIM TERM (Doc. No. 287) at 1–2. Therefore, the Court finds that the proper construction for "data compression engine" is "hardware in, and/or software and/or firmware executed by the digital signal processor or processor of the data storage controller that compresses and/or decompresses data."

[29]The term "data compression engine" is contained in claim 18 of the '457 patent and claims 1, 13, and 14 of the '772 patent.

XV. "programmable logic device"[30]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
a collection of programmable logic elements that can be configurably interconnected	configurable hardware programmed after power-on

Plaintiff argues that nothing in the claim language requires that a programmable logic device ("PLD") be programmed after power-on and that if the configuration for the PLD is stored in non-volatile memory, it need not be programmed after every power-on. PL. REPLY at 21. The F5 Defendants argue that for the digital signal processor ("DSP") to program the PLD, power-on is first required. F5 SURREPLY at 6.

Claim 1 of the '772 patent and claim 18 of the '457 patent both disclose that the PLD is programmed by the processor or DSP, which is comprised of a data compression engine. '772 patent at 31:48–67 (claim 1); '457 patent at 29:29–39, 30:1–13 (claim 18). However, the claims fail to disclose any information regarding when the PLD is configured. The specifications of the '457 and '772 patents do disclose certain embodiments where the PLD seems to be configured after power-on. In one such disclosure in the specification of the '457 patent:

> The programmable logic device 22 preferably implements the logic (program code) for instantiating and driving both the disk interface 14 and the bus interface 15 and for providing full [direct memory access] capability for the disk and bus interfaces 14, 15. Further . . . upon host computer power-up and/or assertion of a system-level "reset" (e.g., PCI Bus reset), the DSP 21 initializes and programs the programmable logic device 22 before of [sic] the completion of initialization of the host computer.

'457 patent at 9:14–30; *see also* '772 patent at 9:35–51. This embodiment seems to support Defendants' proposed construction.

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[30]The term "programmable logic device" is contained in claim 18 of the '457 patent and claims 1, 3, 5, 13, and 15 of the '772 patent.

However, other sections of the specifications of the '457 and '772 patents indicate that the PLD is configured during reset of the host computer—not after power-on or after reset. '457 patent at 9:63–67 ("the boot configuration circuit 28 is employed for controlling the initializing and programming the programmable logic device 22 during configuration of the host computer system (i.e., while the CPU of the host is held in reset);" *id.* 11:28–32 ("Although the boot process begins when the CPU of the host system is released from external reset, the transfer of the boot code into the DSP and the DSP's 30 initialization of the programmable logic device actually occurs while the CPU of the host system is held in reset."); *see also* '772 patent at 18–22. The specifications further set forth that initialization of the PLD does not occur during every reset. '457 patent at 13:21–28; '772 patent at 13:42–49. Moreover, the specifications explicitly note that the patentee did not intend to limit himself to the embodiments disclosed in the specifications." '457 patent at 27:49–57 ("Although illustrative embodiments have been described herein with reference to the accompanying drawings, it is to be understood that the present invention is not limited to those precise embodiments, and that various other changes and modifications may be affected therein by one skilled in the art without departing from the scope or spirit of the invention."); *see also* '772 patent at 31:36–44. As a result, it would be improper to limit the PLD to configuration only after power-on, and thus, the Court rejects Defendants' proposed construction.

While Plaintiff's construction is consistent with the patents' disclosures regarding the PLD, the construction fails to indicate what "programmable logic" is because the construction uses these terms "programmable logic" in the proposed construction. In order to properly assist the jury, the Court rejects Plaintiff's proposed construction for this reason, as a construction which defines "programmable logic" will assist the jury to fully understand the claim language. The specification discloses that the PLD is a hardware device. '457 patent at 9:14–20. Therefore, the Court finds that the term

"programmable logic device" is properly construed as "as digital hardware component that is reconfigurable."

XVI. "instantiate . . . [interfaces for] operatively interfacing"[31]

"instantiate"

Plaintiff's Proposed Construction	Defendants' Proposed Construction
implement	automatically determine the system environment and configure the local system within that environment

"operatively interfacing"

Plaintiff's Proposed Construction	Defendants' Proposed Construction
connecting or coupling to provide a pathway for the transmission of data	enabling bi-directional communication between two separate devices

Claim 18 of the '457 patent discloses that a PLD is programmed to "instantiate a first interface for operatively interfacing the data storage controller to the data storage device." '457 patent at 29:36–39. The specification of the '772 patent discloses that the PLD can be cleared and reprogrammed with new interfaces:

> The volatile nature of the logic device 22 effectively affords the ability to have an unlimited number of hardware interfaces. . . . When necessary, the DSP 21 can clear the interface currently residing in the logic device 22 and reprogram it with a new interface. This feature allows the data storage controller 20 to have compatibility with a large number of interfaces while minimizing hardware resources and thus reducing product cost.

'772 patent at 13:1–12. In other words, the PLD has the capability to be configured to represent interfaces between other hardware devices.

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[31]The term "instantiate . . . [interfaces for] operatively interfacing" is contained in claim 18 of the '457 patent and claims 1 and 13 of the '772 patent.

Plaintiff's proposed construction for "instantiate" implies that the PLD implements, performs, or executes a first interface. However, this is not accurate. The PLD stands as a proxy for the necessary interfaces between other hardware devices—it represents the appropriate interface as needed. Thus, the Court rejects Plaintiff's proposed construction. Similarly, Defendants' proposed construction for "instantiate" is neither helpful to the jury, as it adds unnecessary detail that will not help the jury to understand the term, nor is it proper as it limits the term to a single embodiment. The Court also rejects Defendants' proposed construction for these reasons.

With regard to the term "operatively interfacing," Plaintiff is correct that the '772 patent discloses not only bi-directional interfaces, but also uni-directional. *Compare* '772 patent at 31:46–67 (claim 1) *with id.* at 32:42–60 (claim 13). However, the Court rejects both parties' proposed constructions because both fail to delineate what it is that the PLD is operatively interfacing. While the devices which are "operatively interfaced" by the PLD are disclosed in the claims, the Court finds that the jury would benefit from a definition which specifically discloses the devices, as it will make clear what operatively interfacing is, as well as what is operatively interfaced. Therefore, the Court finds that the proper construction for "instantiate" is "represent" and the proper construction for "operatively interfacing" is "providing a communications channel or pathway between the data storage controller and the data storage device."

XVII. "bandwidth allocation controller . . . for controlling access"[32]

"bandwidth allocation controller"

Plaintiff's Proposed Construction	Defendants' Proposed Construction
a mechanism that allocates bandwidth	a hardware device [or mechanism] for proportioning limited bandwidth in such a way as to optimize the use of available resources and the rate of data transferred between the disk and the host

"controlling access"

Plaintiff's Proposed Construction	Defendants' Proposed Construction
arbitrating among requests for access	allocating access to the cache memory

With respect to the "bandwidth allocation controller," claim 1 of the '772 patent discloses "a bandwidth allocation controller for controlling access to the cache memory device by the data compression engine, the first interface and the second interface." '772 patent at 31:65–67 (claim 1). In a preferred embodiment discussed at length in the specification, "[t]he onboard cache of the data storage controller is shared by the DSP, Disk Interface, and PCI Bus." '772 patent at 19:22–23. In other words, these three devices are sharing bandwidth for their respective operations. The specification goes on to list both a fixed allocation ratio and an allocation formula for allocating bandwidth. '772 patent at 20:25–67, 21:1–35. The specification does not specify how the bandwidth allocation controller is embodied. Thus, the Court finds that Plaintiff's proposed construction is correct. Defendants' proposed construction is overly limiting, in light of the broad terms in which the specification discusses the bandwidth allocation controller. Moreover, Defendants' proposed

[32]The term "bandwidth allocation controller . . . for controlling access" is contained in claim 18 of the '457 patent and claims 1 and 13 of the '772 patent.

construction indicates how bandwidth is allocated, but neither the claim language, nor the specification delineate such a limitation.

With respect to the "controlling access," as previously noted claim 1 of the '772 patent discloses "a bandwidth allocation controller for controlling access to the cache memory device by the data compression engine, the first interface and the second interface." '772 patent at 31:65–67 (claim 1). Furthermore, "[t]he onboard cache of the data storage controller is shared by the DSP, Disk Interface, and PCI Bus." '772 patent at 19:22–23. Thus, the bandwidth allocation controller controls access to cache memory by allocating bandwidth among devices, and Defendants' proposed construction is correct. Therefore, the Court rejects Plaintiff's proposed construction. The Court finds that the proper construction for "bandwidth allocation controller" is "a mechanism that allocates bandwidth," and the proper construction for "controlling access" is "allocating access to cache memory."

XVIII. "compressing said received data stream using a plurality of encoders configured in parallel configuration"/"parallel configuration [of a plurality of encoders]"[33]

"compressing said received data stream using a plurality of encoders configured in parallel configuration"

Plaintiff's Proposed Construction	Defendants' Proposed Construction
using more than one encoder, in parallel configuration, to concurrently compress at least parts of the received data stream	using more than one encoder to concurrently compress the same data stream

[33]The terms "compressing said received data stream using a plurality of encoders configured in parallel configuration"/"parallel configuration [of a plurality of encoders]" are contained in claim 18 of the '937 patent and claim 14 of the '772 patent.

"parallel configuration [of a plurality of encoders]"

Plaintiff's Proposed Construction	Defendants' Proposed Construction
more than one encoder, in parallel configuration, to concurrently compress data	more than one encoder, in parallel configuration, to concurrently compress data from a data stream

Plaintiff argues that the specification clearly discloses that either the entire or parts of the data stream may be processed. PL. REPLY at 25. The F5 Defendants argue that a plurality of encoders in parallel configuration must process data from the same data stream because the patent discloses that such parallel configuration allows for faster processing as the same data stream can be simultaneously processed by multiple encoders. F5 SURREPLY at 9–10. Thus, the only dispute regarding these two terms centers on whether the parallel configuration of encoders must compress the same data stream.

While the claims are silent as to this dispute, the specification indicates that each of the encoders in parallel configuration compress data from the same data stream, as the F5 Defendants argue. For example, the '772 patent discloses:

> [E]ncoders E1 through En of encoder module 125 may operate in parallel (i.e., simultaneously *processing a given input data block* . . . . It is to be further appreciated that encoders of the identical type may be applied in parallel to enhance encoding speed. For instance, encoder E1 may comprise two parallel Huffman encoders for parallel processing of *an input data block*.

'772 patent at 25:29–45. Further, each of these input data blocks are accepted by the data compression system from a single input data stream. *Id.* at 24:53–56. For these reasons, the Court finds that Defendants' proposed construction is proper. Thus, the Court finds that the proper construction for "compressing said received data stream using a plurality of encoders configured in parallel configuration" is "using more than one encoder to concurrently compress the same data stream," and

the proper construction for "parallel configuration [of a plurality of encoders]" is "a configuration [of a plurality of encoders] which concurrently compress the same data stream."

XIX. "second interface"[34]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
second interface	an interface which is physically distinct from the first interface and is between the data storage controller and the host system

Claim 1 of the '772 patent discloses a "second interface for operatively interfacing the data storage controller to a host system." '772 patent at 31:57–58 (claim 1). This claim also discloses that the PLD instantiates the second interface. *Id*. at 53–55. As a result, Defendants' proposed construction which requiring that the second interface be "between the data storage controller and the host system" is unnecessary. Further, the specification of the '772 patent discloses that the PLD can instantiate multiple interfaces. '772 patent at 13:1–3 ("[t]he volatile nature of the logic device 22 effectively affords the ability to have an unlimited number of hardware interfaces"); *id*. at 9:35–41 ("[t]he programmable logic device 22 preferably implements the logic (program code) for instantiating and driving both the disk interface 14 and the bus interface 15"); *id*. at 10:39–42 ("[t]he DSP 21 would then load the appropriate PCI and IDE interfaces into the programmable logic device 22"). Defendants' proposed construction requiring that the second interface be "physically distinct from the first interface" is improper because a single PLD can instantiate both a first and second interface, and these interfaces need not be instantiated on different devices. Therefore, the Court finds that the term "second interface" does not require construction.

[34]The term "second interface" is contained in claim 18 of the '457 patent and claims 1 and 13 of the '772 patent.

XX. "compression rate"[35]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
amount of input data a compressor can compress per unit of time and amount of compressed data a compressor can output per unit of time	indefinite OR rate at which data is output from the compressor

As will be further detailed in the Court's Report and Recommendation regarding Defendants' Motion for Summary Judgment of Invalidity for Indefiniteness ("Indefiniteness Motion") (Doc. No. 247), the Court finds that the term "compression rate" is not indefinite and is properly construed as "compressor throughput as a measure of the amount of input data a compressor can compress and make available for storage per unit of time at a given compression ratio."

XXI. "wherein said first bandwidth is substantially greater than said second bandwidth"[36]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
wherein said first bandwidth is sufficiently greater than said second bandwidth such that applying compression methods would be beneficial	indefinite

[35]The term "compression rate" is contained in claims 1, 2, 13, and 25 of the '104 patent and claims 1 and 9 of the '158 patent.

[36]The parties identified the term "substantially greater" for argument at the *Markman* hearing. TERMS FOR HEARING at 3. However, the parties include the term "wherein said first bandwidth is substantially greater than said second bandwidth" in the claim chart, so the Court will construe this term. *See* CLAIM CHART at 64. The term "wherein said first bandwidth is substantially greater than said second bandwidth" is contained in claim 17 of the '937 patent.

As will be further detailed in the Court's Report and Recommendation regarding Defendants' Indefiniteness Motion, the Court finds that the term "wherein said first bandwidth is substantially greater than said second bandwidth" is not indefinite.[37]

XXII. "plurality of Lempel-Ziv encoders"[38]

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
more than one encoder, each employing a method from the Lempel-Ziv family of compression methods	indefinite

As will be further detailed in the Court's Report and Recommendation regarding Defendants' Indefiniteness Motion, the Court finds that the term "a plurality of Lempel-Ziv encoders" is not indefinite and is properly construed as "a plurality of encoders which implement a compression methodology for dictionary-based lossless data compression, wherein a dictionary contains any data sequence that has already been used to build the dictionary contents, wherein a pointer to an earlier entry in the dictionary contents indicates a data sequence, and wherein either a combination of address to already coded dictionary contents and sequence length is stored or only an index to the dictionary is stored.[39]

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[37]Defendants did not offer a proposed construction for this term, relying solely on their Indefiniteness Motion. BLUE COAT RESP. at 11–12. Having resolved the dispute regarding whether this claim term is indefinite, the Court declines to adopt a construction at this point. Although Plaintiff has proposed a construction, Defendants have not set forth a position on the issue of the proper scope of this term. Should the parties determine that a dispute as to the scope of this term remains, the parties may submit further briefing regarding their proposed constructions and arguments in support thereof.

[38]The term "plurality of Lempel-Ziv encoders" is contained in claim 20 of the '937 patent.

[39]9 Defendants did not offer a proposed construction for this term, relying solely on their Indefiniteness Motion. BLUE COAT RESP. at 14. Having resolved the dispute regarding whether this claim term is indefinite, the Court finds that it is can adequately and appropriately adopt a construction for this term based on both the parties' arguments in the briefing and at the *Markman* hearing.

XXIII. "means for performing lossless compression"[40]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
Function: performing lossless compression Structure: encoder module 25 using any lossless compression method such as Run length, Huffman, Lempel-Ziv Dictionary Compression, arithmetic coding, data compaction, and data null suppression	Function: performing lossless compression Structure: encoder module 25 using Run length, Huffman, Lempel-Ziv Dictionary Compression, arithmetic coding, data compaction, and data null suppression

The parties agree that the corresponding structure is at least encoder module 25 using Run length, Huffman, Lempel-Ziv Dictionary Compression, arithmetic coding, data compaction, and data null suppression. *See* PL. REPLY AT 26; CITRIX RESP. at 14–15. However Plaintiff contends that the "means for performing lossless compression" is encoder module 25 "using any lossless compression method," and the term is not limited to the six particular methods included in Defendants' proposed construction. PL. REPLY at 26. In other words, Plaintiff contends that the listed methods are merely exemplary. *Id*.

Claim 24 of the '104 patent depends from claim 13 and discloses "[t]he system of claim 13, wherein the means for compressing comprises means for performing lossless compression." '104 patent at 20:44–46 (claim 24). The specification discloses that encoder module 25 may comprise a set of encoders, each using lossless encoding techniques such as run length, Huffman, Lempel-Ziv Dictionary Compression, arithmetic coding, data compaction, and data null suppression. '104 patent at 11:44–50. Because the specification links encoder module 25 using *the listed lossless compression methods* to the function of performing lossless compression, *Medtronic*, 248 F.3d at 1311, the Court finds that the means for "performing lossless compression" is encoder module 25 using lossless

[40]The term "means for performing lossless compression" is contained in claim 24 of the '104 patent.

compression that is one or more of Run length, Huffman, Lempel-Ziv Dictionary Compression, arithmetic coding, data compaction, and data null suppression and equivalents thereof.

XXIV. "plurality of encoders of an identical type"[41]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
more than one encoder, each employing the identical compression method	multiple encoders that employ the identical compression algorithm

Plaintiff argues that its construction properly requires that the encoders use the same algorithms, just with different associated dictionaries which are generated as a result of the different data being compressed during the process. PL. REPLY at 26. Plaintiff further argues that Defendants' proposed construction is "ambiguous as to what identical algorithm means." *Id.* The Blue Coat Defendants argue that their proposed construction correctly interprets the disputed term as requiring identical algorithms, rather than an identical method. BLUE COAT RESP. at 13.

Claim 19 of the '937 patent depends from claim 17 and discloses "[t]he method of claim 17, wherein said compressing said received data stream comprises compressing said received data stream using a plurality of encoders of an identical type." '937 patent at 20:30–33 (claim 19). The specification of the '937 patent indicates that encoders of an identical type utilize the same encoding technique. '937 patent at 12:26–30 (noting that encoders of an identical type may be applied in parallel by utilizing, for example, "two parallel Huffman encoders for parallel processing of an input data block").

The parties' main dispute centers on whether the "method" or "algorithm" used by the encoders must be identical. *See* OPENING at 12. Throughout the specification, the patentee refers to compression methods, and in context, the term "compression methods" is used in a broad sense to

[41]The term "plurality of encoders of an identical type" is contained in claim 19 of the '937 patent.

indicate an approach or procedure. *See, e.g.*, '937 patent at 7:10–12 ("Referring now to FIGS. 4a and 4b, a timing diagram illustrates *methods for accelerated data storage utilizing data compression* in accordance with the present invention.") (emphasis added); *id.* at 11:20–25 ("any conventional *compression/decompression system and method* . . . may be employed . . . for providing accelerated data storage and retrieval in accordance with the present invention") (emphasis added); *id.* at 13:35–41 ("*other compression systems and methods* known to those skilled in the art may be employed for providing accelerated data storage in accordance with the teachings herein") (emphasis added).

In contrast, the patentee uses the term algorithm in a narrower sense, to indicate a particular encoding technique. *See* '937 patent at 3:49–57 ("The present invention is realized due to recent improvements in processing speed . . . coupled with advanced data compression and decompression algorithms, [which] are enabling of ultra high bandwidth data compression and decompression methods that enable improved data storage and retrieval bandwidth."). When the patentee indicates that an example of encoders of an identical type includes two parallel Huffman encoders, the patentee is pointing to the encoding algorithm utilized by the encoders—not the approach, procedure, or method of compressing data. Therefore, the Court finds that the proper construction of "plurality of encoders of an identical type" is "multiple encoders that employ the identical compression algorithm."

XXV. "compression type"[42]

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
compression method	lossy or lossless compression

Claim 1 of the '158 patent discloses a method for providing accelerated data storage that includes the step of "reading a first parameter that is indicative of a compression type to be applied

[42]The term "compression type" is contained in claims 1, 6, and 9 of the '158 patent.

tothe input digital data stream." '158 patent at 20:19–21 (claim 1). The specification goes on to describe data compression type descriptors:

> A description module 38 . . . appends a corresponding compression type descriptor to each encoded data block which is selected for output so as to indicate the type of compression format of the encoded data block. A data compression type descriptor is defined as any recognizable data token or descriptor that indicates which data encoding technique has been applied to the data.

'158 patent at 14:1–8. Based on the definition of data compression type descriptor disclosed, compression type refers to a data encoding technique. As previously noted in section XXIV, *supra*, the patentee refers to encoding/compression techniques in a narrower sense than compression methods. Thus, compression type does not mean a compression method, as proposed by Plaintiff. Further, the specification also discloses that "certain data parameters may be read [] to determine whether the data may be compressed utilizing lossless or lossy techniques." '158 patent at 10:18–20. Thus, the Court finds that the proper construction for "compression type" is "lossy or lossless compression."

XXVI. "first parameter indicative of a compression type to be applied"[43]

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
an attribute that indicates which compression method to apply	any recognizable data token or descriptor that indicates whether to apply lossless or lossy compression

Pursuant with the Court's ruling in section XXV, *supra*, the Court finds that the proper construction for "first parameter indicative of a compression type to be applied" is "any recognizable data token or descriptor that indicates whether to apply lossless or lossy compression."

[43]The term "first parameter indicative of a compression type to be applied" is contained in claim 1 of the '158 patent.

XXVIII. "non-identifiable data type"[44]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
data type that is not identified	data type that cannot be identified

Claim 1 of the '992 patent discloses:

> 1. A method comprising:
> receiving a data block;
> determining whether or not a data type is identified for said data block;
> compressing, if said data type is identified, said data block with at least one encoder associated to said data type to provide a compressed data block;
> compressing, if said data type is not identified, said data block with at least one encoder associated to a **non-identifiable data type** to provide said compressed data block; and
> storing said compressed data block.

'992 patent at 26:50–62 (claim 1). Further, the specification discloses that a data block is compressed using content independent data compression when the content of a data block cannot be identified, as Defendants' proposed construction indicates. '992 patent at 16:4–7; *see also id.* at 18:17–20; *id.* at 20:66–67, 21:1–2; *id.* at 23:13–18.[45] Therefore, the Court finds that the proper construction for "non-identifiable data type is "a data type that cannot be identified."

[44]The term "non-identifiable data type" is contained in claims 1, 8, and 11 of the '992 patent.

[45]These portions of the specification further indicate that a non-identifiable data type may also be "not associable with a specific data compression algorithm." However, a data type that cannot be associated with a compression algorithm is a "data type that cannot be identified" because it cannot be associated. It is not a "data type that is not identified."

CONCLUSION

For all the foregoing reasons, the Court construes the disputed claim language in this case in the manner set forth above.[46] For the ease of reference, the Court's claim interpretations are set forth in a table attached to this opinion as Appendix A.

So ORDERED and SIGNED this 22nd day of June, 2009.

JOHN D. LOVE
UNITED STATES MAGISTRATE JUDGE

[46]Defendant Citrix also filed a Motion to Exclude Dr. Brian Von Herzen's Opinions Regarding Claims Construction ("Motion to Exclude Von Herzen") (Doc. No. 258), along with a Motion to Exclude Extrinsic Evidence Untimely Identified by Plaintiff Realtime Data LLC in Support of Claim Construction ("Motion to Exclude Untimely Evidence") (Doc. No. 280). Regarding the untimely evidence Defendant Citrix moves to exclude, Plaintiff filed a Motion for Leave to Supplement the Parties' Joint Claim Construction and Prehearing Statement ("Motion for Leave") (Doc. No. 282). The Court **DENIES** theses motions as being **MOOT** because the Court did not consider the opinions of Dr. Von Herzen, nor any of the other disputed evidence when construing the disputed claim terms.

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION

REALTIME DATA, LLC D/B/A IXO,	§	
	§	
Plaintiff,	§	
	§	
v.	§	**CIVIL ACTION No. 6:08cv144**
	§	
PACKETEER, INC., et al.,	§	
	§	
Defendants.	§	
	§	

APPENDIX A

U.S. PATENT [illegible]4; 6,604, 158; 7,321,937; 6,624,761; 7,161,506; 7,378,992; 7,352,300; 6,748,457; and 7,376,772

Claim Language	Patents and Claims	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
encoders	'937 patent, claims 17, 18, 19, 20 '[illegible]ent, claim 17 '[illegible] patent, claims [illegible], 7, [illegible], 42, 43, 69, 81, 82, 86, 87, [illegible], 96, 98 '300 patent, claims [illegible], 21, 24, 36, 37, 42, 43, 47, 60	AGREED	AGREED	hardware or software that performs data compression
compressing, in at least real-time	'937 patent, claim 17	AGREED	AGREED	Compressing at the rate that the data stream is input or faster
storage device	'104 patent, claims 1, 2, 12, 13, 18, 25 '158 patent, claims 1, 6, 9	AGREED	AGREED	a memory device
plurality of encoders	'937 patent, claims 17, 18, 19	AGREED	AGREED	more than one encoder

Claim Language	Patents and Asserted Claims	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
compression ratio	'506 patent, claims [illegible]	AGREED	AGREED	ratio of the number of bits in a data block input to an encoder to the number of bits in that data block output from that encoder
encoder types	'761 patent, claim 3	AGREED	AGREED	encoders implementing different compression methods
compressing	[illegible] patent, claims [illegible], 7, 13 '457 patent, claim 18	AGREED	AGREED	representing data with fewer bits
non-volatile memory device	'772 patent, claims 1, 3, 13 '457 patent, claim 18	AGREED	AGREED	a memory device that retains data in the absence of power supply
logic code	'772 patent, claims 1, 13 '457 patent, claim 18	AGREED	AGREED	a set of executable instructions

Claim Language	Patents and Asserted Claims	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
plurality	'300 patent, claims 1, 6, 7, 41, 42 '300 patent, claims 19, 21, 24, 42, 47	AGREED	AGREED	more than one
target storage device	'104 patent, claims 1, 13, 25 '158 patent, claims 1, 9	local memory device that receives data from the compressor	the device to which information is ultimately destined for storage	an identified memory device to which data is directed for storage
data storage device	'772 patent, claims 1, 13 '457 patent, claim 18	local memory device that receives data from the compressor	the device to which information is ultimately destined for storage	an identified memory device to which data is directed for storage
data storage rate	'104 patent, claims 1, 13, 25 '158 patent, claims 1, 9	maximum sustained rate at which data can be written to the data storage device	maximum rate at which data can be stored on the data storage device	maximum sustained rate at which data can be written to the data storage device

Claim Language	Patents and Asserted Claims	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
increases the effective data storage rate	'104 patent, claims 1, 13, 25 ıims 1, 9	increases the effective maximum sustained rate at which data can be written to the storage device by e	Citrix Defendants: increasing the maximum storage rate of a storage device by simultaneously ıning of the compression process through the completion of storage of the data stream on the target storage device is less than the time to simply store the uncompressed data stream on the target storage device at the maximum data storage rate	increases the data storage rate by compressing and storing the data on the data e to simply ssed data on the data storage device at the maximum sustained data storage rate
means for receiving a data stream having an input data transmission rate which is greater than a data storage rate of the data storage device	'104 patent, claim 13	Function: receiving a data stream having an input data transmission rate which is greater than a data storage rate of a data storage device Structure: input data buffer or cache 15, counter 20, or encoder module 25	Function: receiving a data stream having an input data transmission rate which is greater than a data storage rate of a data storage device Structure: input data buffer 15 of the data accelerator 10	an input data port of data accelerator 10 and equivalents thereof

Claim Language	Asserted Claims	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
means for compressing the data stream at a compression rate that increases the effective data storage rate of the data storage device	m	Function: compressing the data stream at a compression rate that increases the effective data storage rate of the data storage device Structure: encoder module 25	Function: compressing the data stream at a compression rate that increases the effective data storage rate of the data storage device Structure: Data compression portion of data storage accelerator 10, including encoder module 25, counter module 20, buffer/counter module 30, and compression [ratio] module 35	encoder module 25 and equivalents thereof
data type	'761 patent, claims 1, 2, 3 '506 patent, claims 1, 5, 6, 7, 8, 41, 42 '992 patent, claims 1, 4, 7, 8, 9, 11, 12, 20 '300 patent, claims 19, 21, 23, 24, 42, 46, 47	an attribute of the data	s	
content independent data compression	'761 patent, claim 1	compression only applied to a given data block when the data type of the data block is not identified or that data type is not correlated with one or more encoders	compressing a particular data block of unidentified data type with each of a plurality of enabled lossless encoding techniques and comparing the compression results thereof to select the optimal encoder	compression that is applied using one or more encoders without regard to the encoder's (or encoders') ability to effectively encode the data type of the data block

Claim Language	Patents and Asserted Claims	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
single data compression encoder	'506 patent, claims 1, 27, 86, 0, 96,	one data compression encoder	compression using content independent data	encoder
said data compression encoder	'506 patent, claim 81	a data compression encoder referred to in claim 69	compression using content independent data compression	a data compression encoder referred to in claim 69
a data compression encoder	'506 patent, claim 69	one or more data compression encoders	compression using content independent data compression	sion encoders
encoder	'992 patent, claims 12, 15, 20	an encoder used automatically in the absence of a designated alternative	compression using content independent data compression	an encoder used automatically in the absence of a designated alternative
wherein if one or more encoders is associated to said type, compressing said data block with at least one of said one or more encoders, else compressing with a data compression encoder	'506 patent, claim 69	wherein if one or more encoders is correlated with said type, compressing said data block with at least one of said one or more encoders, otherwise compressing with one or more data compression encoders	wherein if one or more encoders is linked through hardware or software instructions to said data type, compressing said data block with at least one of said one or more encoders, else compressing using content independent data compression	wherein if one or more encoders is correlated with said type, compressing said data block with at least one of said one or more encoders, otherwise compressing with one or more data compression encoders

[47]While the parties consistently dispute the meaning of this term in their briefs, it does not appear in their Claim Chart.

Claim Language	Patents and Asserted Claims	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
data stream	'761 patent, claims 1, 17, 21 '506 patent, claims 69, 86 '[illegible] patent, claims 1, 13, 25 '[illegible] patent, claims 24, 28, 47, 51 '158 patent, claims 1, 6, 9, 14 '937 patent, claims 17, 18, 19, 20	one or more data blocks transmitted in sequence	a contiguous stream of data blocks	one or more data blocks transmitted in sequence
input data stream	'761 patent, claims 1, 17 '506 patent, claims 1, 16, 17, 21	one or more data blocks transmitted in sequence where the transmission of the sequence is not initiated by the receiver	a contiguous stream of incoming data blocks	one or more input data blocks transmitted in sequence

Claim Language	Patents and Asserted Claims	Plaintiff's Proposed Construction	Defendants' Proposed Construction	[illegible]
receiving a data stream	'104 patent, claims 1, 15, 25 '937 patent, claim 17 '158 patent, claims 1, 9	receiving one or more data blocks transmitted in sequence where the transmission of the sequence is not initiated by the receiver	receiving a contiguous stream of incoming data blocks	receiving one or more data blocks transmitted in sequence
resolution parameters	'300 patent, claims 19, 42	selecting the number of pixels in an image, the number of samples in a second of audio, and/or the number of bits per sample for audio or for images	selecting the number of pixels in an image	n image, the number of samples in a second of audio, and/or the number of bits per sample for audio or for images
wherein said lossy compression encoder compresses said data block at said selected resolution parameters;	'300 patent, claims 19, 42	wherein said first lossy compression encoder compresses said data block according to selected number of pixels in an image, number of samples in a second of audio, and/or number of bits per sample for audio or for images	wherein said first lossy compression encoder compresses said data block to achieve the selected number of pixels in an image	wherein said first lossy compression encoder compresses said data block according to selected number of pixels in an image, the number of samples in a second of audio, and/or the number of bits per sample for audio or for images

Claim Language	Patents and Asserted Claims	Plaintiff's Proposed Construction	Defendant's Proposed Construction	Court's Construction
desirability factor	'300 patent,	[illegible]irability of using a specific encoder. Desirability factor does not include compression threshold	[illegible]any number of user considerations including, but not limited to, compatibility of the encoded data with existing standards, data error robustness, or any other aggregation of factors that the user wishes to consider [illegible] applied to each encoded data block and that is used to calculate a figure of merit for each encoded data block	[illegible]ed to [illegible]of user [illegible]ng, [illegible]e encoded data with existing [illegible]standards, data error [illegible]robustness, or any other [illegible]aggregation of factors that the user wishes to consider for a particular application
data compression engine	'772 patent, claim 1, 13, 14 '457 patent, claim 18	hardware, software and/or firmware that compresses and/or decompresses data or is programmed to compress and/or decompress data	Hardware, software or firmware in the DSP or processor of the data storage controller that compresses and/or decompresses data	hardware in, and/or software and/or firmware executed by the digital signal processor or processor of the data storage controller that compresses and/or decompresses data
programmable logic device	'772 patent, claims 1, 3, 5, 13, 15 '457 patent, claim 18	a collection of programmable logic elements that can be configurably interconnected	configurable hardware programmed after power-on	a digital hardware component that is reconfigurable

Claim Language	Patents and Asserted Claims	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
instantiate	'772 patent, claims 1, 13 '457 patent, claim 18	implement	automatically determine the system environment and configure the local system within that environment	represent
operatively interfacing	'772 patent, claims 1, 13 '457 patent, claim 18	connecting or coupling to provide a pathway for the transmission of data	enabling bidirectional communication between two separate devices	providing a communications channel or pathway between the data storage controller and the data storage device
bandwidth allocation controller	'772 patent, claims 1, 13 '457 patent, claim 18	a mechanism that allocates bandwidth	a hardware device [or mechanism] for proportioning limited bandwidth in such a way as to optimize the use of available resources and the rate of data transferred between the disk and the host	a mechanism that allocates bandwidth
controlling access	'772 patent, claims 1, 13 '457 patent, claim 18	arbitrating among requests for access	allocating access to cache memory	allocating access to cache memory
compressing said received data stream using a plurality of encoders configured in parallel configuration	'937 patent, claim 18	using more than one encoder, in parallel configuration, to concurrently compress at least parts of the received data stream	using more than one encoder to concurrently compress the same data stream	using more than one encoder to concurrently compress the same data stream

Claim Language	Patents and Asserted Claims	[illegible]tion	[illegible]ion	
parallel configuration [of a plurality of encoders]	'172 patent, claim 14	using more than one encoder, in parallel configuration, to concurrently compress at least parts of the received data stream	more than one encoder, in parallel configuration, to concurrently compress data from a data stream	a configuration [of a plurality of encoders] which concurrently compress the same data stream
second interface	'172 patent, claims 1, 13 '457 patent, claim 18	second interface	an interface which is physically distinct from the first interface and is between the data storage controller and the host system	second interface
compression rate	'104 patent, claims 1, 2, 13, 25 '158 patent, claims 1, 9	amount of input data a compressor can compress per unit of time and amount of compressed data a compressor can output per unit of time	Indefinite OR rate at which data is output from the compressor	compressor throughput as a measure of the amount of input data a compressor can compress and make available for storage per unit of time at a given compression ratio
wherein said first bandwidth is substantially greater than said second bandwidth	'937 patent, claim 17	wherein said first bandwidth is sufficiently greater than said second bandwidth such that applying compression methods would be beneficial	Indefinite	

Claim Language	Patents and Asserted Claims	Plaintiff's Proposed Construction	Defendants' Proposed Construction	[illegible] Construction
plurality of Lempel-Ziv encoders	'937 patent, claim 20	more than one encoder, each employing a method from the Lempel-Ziv family of compression methods	Indefinite	[illegible] ss data compression, wherein a dictionary onary inter combination of address to already coded dictionary contents and sequence length is stored or only an index to the dictionary is stored
means for performing lossless compression	'104 patent, claim 24	Function: performing lossless compression Structure: encoder module 25 using any lossless compression method such as Run length, Huffman, Lempel-Ziv Dictionary Compression, arithmetic coding, data compaction, and data null suppression	Function: performing lossless compression Structure: Run length, Huffman, Lempel-Ziv Dictionary Compression, arithmetic coding, data compaction, and data null suppression	using lossless compression that is one or more of Run length, Huffman, Lempel-Ziv Dictionary Compression, arithmetic coding, data compaction, and data null suppression and equivalents thereof

Claim Language	Patents and Asserted Claims	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
plurality of encoders of an identical type	'937 patent, claim 19	more than one encoder, each employing the identical compression method	multiple encoders that employ the identical compression algorithm	multiple encoders that employ the identical compression algorithm
compression type	'158 patent, claims 1, 6, 9	compression method	lossy or lossless compression	lossy or lossless compression
first parameter indicative of a compression type to be applied	'506 patent, claim 1	an attribute that indicates which compression method to apply	any recognizable data token or descriptor that indicates whether to apply lossless or lossy compression	any recognizable data token or descriptor that indicates whether to apply lossless or lossy compression
content dependent data compression	'761 patent, claim 1 '506 patent, claims 1, 5, 6, 7, 8, 9, 10, 11, 41, 42, 43, 86, 87, 88, 89, 90, 98	compression only applied to a given data block when the data type of the data block is identified and that data type is correlated with one or more encoders	compressing the data block using an encoder selected based on the data type of the data block	compression that is applied using one or more encoders selected based on the encoder's (or encoders') ability to effectively encode the of the data block
non-identifiable data type	'992 patent, claims 1, 8, 11	data type that is not identified	data type that cannot be identified	a data type that cannot be identified